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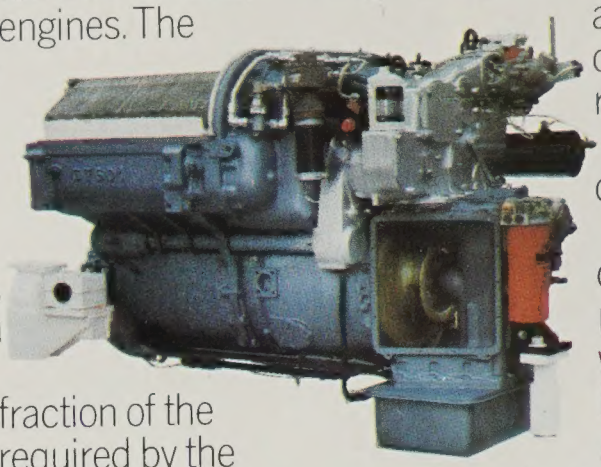
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ARMY
The Magazine of Landpower

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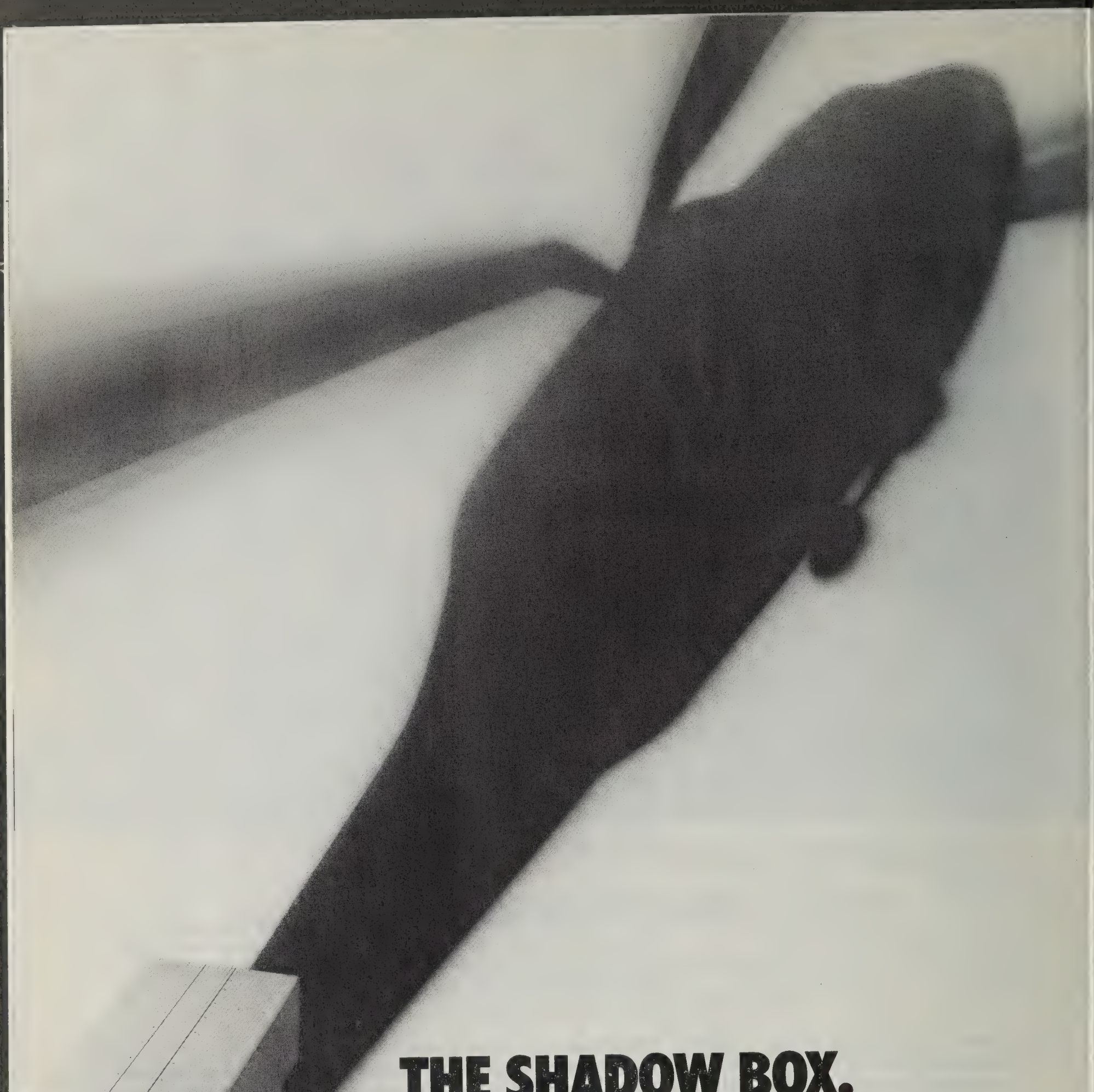
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Article on Korean Partisan Forces Stirs Memories

■ Thanks for bringing back a lot of old memories and presenting lots of information that I never was aware of, in Maj. Shaun M. Darragh's "Hwanghae-do: The War of the Donkeys" (November).

Over the years I have tossed around the word "donkeys" from time to time when trying to impress other old soldiers, and have only met with blank expressions. I am sure that my attempts to explain them were accepted as "war stories, some of which are true."

Letters

I went ashore on Ch'o-do with my automatic weapons antiaircraft artillery unit late in April 1952. I well recall my commander's doleful expression when he let me know, before my departure on an LST out of Inchon, that intelligence reports claimed that North Korea and Chinese forces were going to storm ashore and take Ch'o-do on 1 May.

When I arrived, I found Terry and the Pirates alive and well. My purpose in life was to protect the U.S. Air Force aircraft control and warning station from being shut down as the result of low-level enemy air attack, and to help cover the potential landing beaches with 40-mm and quad .50-mm fire.

The Air Force was there, about 40 strong, with a radar set that was pointed right at Antung and Manchuria, China, and Sinuiju, North Korea. With their uncluttered look across about 100 miles of water, the Air Force controllers could watch the MiGs taking off and landing from those airfields, and vector in our fighters from the south for interception.

The Marines made their presence known with a 26-man training team which worked with the South Korean marine battalion manning the perimeter defenses.

The South Korean Navy had three or four mine sweepers in the harbor, and the UN Forces were represented in the straits that separated us from the North Korean mainland. Occasionally, that force included H.M.S. *Belfast*, a British cruiser (now a floating museum in the Thames across from the Tower of London), the New Zealand frigate *Rotoiti*, The Netherlands destroyer *Pieter Bock*, and the U.S. destroyer *Yarnall*. Often overhead we would see the Corsairs from the U.S. aircraft *Boxer* and the Seafires from H.M.S. *Ocean*.

Then there were the pirates. There were several cloak-and-dagger types on the island from various agencies. They would appear in their motorized junks and set up shop, then mysteriously disappear for a while.



Of course, the largest pirate band was the donkey force. As I recall, at one time we had about 11 donkey companies in residence. They were a real mystery to the rest of us on the island. We would often watch a group sail away in the evening in their motorized junks and sampans, and see them return at dawn with their cargo of prisoners, North Korean cows and their own wounded.

During our island defense exercises, while my gunners were shooting up 55-gallon oil drums floating in the straits, the donkeys joined with the Korean marines in bringing small arms, light machine-gun and mortar fire to bear on our simulated enemies.

Because we were only 5,000 yards from North Korea, we were under attack frequently from Korean or Chinese artillery on the mainland. Although being under fire is never pleasant, one of the great joys of my life occurred on the day my battalion commander came up to check on his islanders (our battalion headquarters was far away in Inchon) and was greeted by an artillery salute from our friends across the water. Nothing could have convinced him more that his islanders were not spending their time lollygagging on the island's beautiful beaches.

I spent six and one-half months on Ch'o-do, got shelled often, got bombed once, got "typhooned" once, saw many F-86 and MiG dogfights overhead, met strange young men in nonuniform uniforms who performed mysterious missions, learned to play *go*, and learned about donkeys. The North Korean and Chinese forces never did come ashore.

Despite the shelling, the Air Force radar crew was put out of action only once, and then only for a short time. Without a doubt, that 6½ months was the strangest sojourn of my life.

Thanks again for bringing it all back to my mind by publishing Maj. Darragh's article.

COL. DONALD R. PERKINS
AUS, retired
Washington, D.C.

■ I greatly enjoyed Maj. Shaun M. Darragh's article, "Hwanghae-do: The War of the Donkeys," which appeared in the November issue. I served with the 8240th Army Unit and the United Nations Partisan Forces from May of 1952 to May of 1953 as a sergeant first class. I had been pulled off the pier after arrival in Yokohama and assigned to the 8240th. I served, after enlistment in 1948, in the 82nd Airborne Division, joining with guerrilla units off the west coast operating in the Mongumpo-ri area in 1952.

As a sergeant first class, I had responsibility for planning and conducting the operations of two battalion-sized units organized along our infantry battalion lines with light and heavy weapons companies. We were provided air and naval support. I was both the forward air controller and the forward observer on the ground, and commanded through the elected gun leader.

Operations entailing movement in junks were hazardous business, and late night landfalls, more often than not, found the force on a piece of terrain not planned for. Fortunately, the guerrillas knew where they were and where we needed to move. After nine months in this operation, I moved to another element of our special operations.

Importantly, unit training was conducted in the units by the guerrilla leadership and the one or two U.S. personnel with them. During my nine months, five of them were spent as the sole U.S. person in the battalions. I agree with Maj. Darragh: it's time the men of UNPF-K were recognized for their work.

MAJ. GEN. K. A. JOLEMORE
Norfolk, Va.

In Support of the General

■ It is ironic that ARMY's November issue contains both an excellent book review by Maj. Gen. L. Gordon Hill Jr. of *A Matter of Honor, General William C. Westmoreland Versus CBS*, by Don Kowet, and a letter to the editor by Lewis Sorley ("Appeal to Reason"), which takes issue with a letter in the June ARMY ("Help

Gen. Westmoreland") by Tony Bliss Jr., a chairman of Veterans for Westmoreland.

Mr. Sorley disagrees with Mr. Bliss's assertion that "Gen. Westmoreland is fighting for the integrity of all of us"—for the American military as an institution and for every person who has ever worn his country's uniform. Mr. Sorley points out that Gen. Westmoreland "is not . . . fighting for the integrity of [Col.] Gaines Hawkins. . . ." (Col. Hawkins is a CBS witness who appears to infer that the general deceived his superiors.)

Granting that the Bliss statement may contain some hyperbole and that Gen. Westmoreland is probably not at this moment dedicated to Col. Hawkins's integrity, I must nevertheless take issue with the tenor of Mr. Sorley's letter.

It is difficult to imagine that any informed military person could have watched the CBS "documentary," "The Uncounted Enemy: A Vietnam Deception," without experiencing feelings of disbelief, shock and revulsion. Make no mistake—we were *all* soiled by that shabby and contrived production. Furthermore, like many other CBS programs (including reporting of the Vietnam war) it was anti-U.S. military. CBS took as a logical target a senior and respected commander. What better way to undermine the credibility of the institution? Mr. Bliss's letter made one other important point: more is at stake in this trial than honor.

The integrity of the media is also at issue and whether its First Amendment rights include unrestricted right to libel, with reckless disregard for the truth. I hope that the trial will result in more responsible reporting.

Gen. Westmoreland's decision (at age 68) to sue CBS for libel was an act of courage and determination, hardly that of a man who has reason to fear the truth. In what his fellow veterans call his "fourth war," he stands not alone, but for all of us. Like it or not, we're in this with him, in the words of his paratroopers, "all the way!"

MAJ. GEN. HERBERT G. SPARROW
U.S. Army, retired
Arlington, Va.

ARMY invites letters to the editor. The subject matter may be about material that has appeared in the magazine or about any topic which the writer feels would be of interest to ARMY readers. The editors reserve the right to edit letters for reasons of style, accuracy or because of space limitation. All the letters must be signed, and while we prefer to carry the writers' names we will consider requests for withholding them if there is a compelling reason to do so.
The Editors

Building Veteran Unity

■ The letter from SFC Don Norton, U.S. Army, retired, needs a response (" 'Back-street' Vets," "Letters," November). I can understand and appreciate where Sgt. Norton is coming from, but I cannot agree with the thesis that the "shaggy, bearded, one-time active GIs" are our worst enemy.

Our worst enemy, if we indeed have one, has to be ourselves. If we deny those we serve with, then we deny a heritage that encompasses all veterans. We can be the catalyst for creating, in the public eye, a veterans' organization that has no boundaries, no limitations, no formal structure, yet a bond of pride which brings us together.

It has been 15 years, but I see more and more of that pride. And I see it more in the "ragtags" than any other group who served in Vietnam. They are typically those people who served one or two enlistments and then left the military. Many have moved on to successful civilian careers, while others completed military careers.

Among us are those who served in Vietnam, but have yet to come home. Some wear uniforms still, some are corporate officers and some are street people.

I strongly believe we are still part of a fraternal order that has many unique identifiers. Some of the identifiers reflect positive attributes. Like any organization, it also has those identifiers that can diminish or tarnish the positive factors.

Once we excuse the negatives by singling out one part of us—none of us win. This is not to say we excuse the behavior of those who have done wrong and may use Vietnam as the excuse for their behavior.

There are some who do suffer from post-traumatic stress disorders. Others are simply "acting out."

The Vietnam war, although never officially a war, ended unlike any other foreign war has for this country: America was beaten; we lost.

If we let that mind-set permeate our own unique military traditions, then we shall never overcome. We will have trapped ourselves in the same kind of thinking that many citizens have: denial of wrongdoing but damnation for the military, since they are the logical ones to blame for this defeat.

Thus, I differ with Sgt. Norton in my concern for veterans' benefits. We have what we have, and probably there is not much more to gain. There are those who will go on fighting for our benefits, and their victories will be victories for all of us.

I believe it is important that we Vietnam veterans build strong relationships among ourselves and among all veterans. Our profession is the only one that expects the ultimate price of its members. Many in this profession paid that price in Vietnam.

Our commitment has to be to one another. The 1960s' image Sgt. Norton makes note of was also an image from a time when we stretched out a hand to help a comrade up out of a rice field. Although it is nearly 20 years later, we still need the outstretched hand—same purpose, different reason.

LT. COL. WILLIAM R. HARVEY
U.S. Army, retired
Springfield, Va.

Strictly Business

■ I was pleased to read Brig. Gen. John Lawlor's article concerning the press and war reporting ("Controversy Continues on Role Press Plays in War Reporting," "Front & Center," November). I have long felt that the press is a business and that reporters are working men and women, designed to turn a profit and to make a living. They are nothing special and should not be privileged.

The "fourth estate" is a group of people who make their living reporting their observations and, sometimes, their creations. The business of bringing the products together and selling them for a profit to the reader-public is just that—a business for profit—and no more.

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titillates does not give them any right to special privileges. Other forms of business are content to produce and sell their products profitably, without claims to special treatment. It is about time that the public viewed reporters as they are: working men and women who serve up what passes for news, which they gather from the activities of others.

If nothing happened, reporters would have nothing to sell, unless they created fictions under the guise of news. Novelists do not claim privilege as reporters because they recognize that their writings are creations to be sold in the marketplace for profit.

The First Amendment doesn't change the character of the news business. It does protect the rights of the public to be informed, if that is what they want and are willing to pay for.

The news business has wrapped itself in the protection of the First Amendment and made claims to which they are not entitled. The government and its leaders have become docile in the desire to avoid defamation and false information.

The military has found that disclosures harming national security hurt their ability to carry out the defense of the nation effectively. They should not have to apologize for not inviting businesspeople, in the guise of news gatherers, to witness actions like Grenada or preparations for national defense.

The military would not think of allowing defense manufacturers to accompany troops in military actions so that they could design profit-making enterprises for their own financial gain. They ought to treat the press the same way.

LT. COL. EMANUEL KINTISCH
U.S. Army Reserve, retired
Alexandria, Va.

Reinventing OPMS?

■ In July 1984, ARMY graciously published an article I wrote on OPMS ("Unraveling Mystery of OPMS," "Front & Center"). My main recommendation was that we do away with dual specialties and revert to managing the officer corps by branches. Col. Ward M. LeHardy, who headed up the OPMS study group, later "pooh-poohed" my article as inaccurate, unfounded and so on ("Pro, Con on Article Criticizing Officer Personnel Policies," "Letters," September).

According to Col. LeHardy's after-action report in "Commander's Call" for September/October 1984, his committee has recommended we roll back 25 of our 38 specialties into 15 basic branches, and that we take the 13 remaining specialties and start calling them "functional areas," except one (43), which will become a "skill."

To be exact, three new functional areas will be added. Disregarding the three new ones (force development, USMA professors and combat development) and number 43 (community activities management), I find that 11 of the 12 remaining functional areas were called (until 1973) "special career programs."

Special career programs, it will be recalled, were open to officers of all branches. These officers were trained and utilized in their career program, but were also expected to remain "branch qualified" and periodically return for a branch-related assignment (a foreshadowing of dual specialty?).

Until 1974, most officers were utilized in their 15 respective basic branches. Except for the discontinuance of the WAC Branch and the addition of the Aviation Branch, these are the same branches to which Col. LeHardy is rolling us back.

It appears to me that Col. LeHardy has reinvented the pre-1974 officer management system. My questions are: Why did it take a task force of 30 or more members to reinvent the past; and why did Col. LeHardy malign my recommendation to revert to branches when, in essence, he is making a similar recommendation?

MAJ. DONALD G. SANDSTROM
Indianapolis, Ind.



"Private Kaascohaskiwaskusikoyski, your name tag is dragging again."

The True Survivor

■ I enjoy very much your articles on new weapons systems currently in use or planned for use in our Army. While reading ARMY, I couldn't help but wonder about my old combat arm, the infantry, and how the "grunt" has had to and will continue to adapt to the new weapons. Then I remembered a comment made by Field Marshal Helmuth von Moltke in 1866 about the infantryman and weapon inventions.

Each new weapon, so say the experts, is the death of the infantry. The infantryman silently pulls on his gear and smiles. He knows that tomorrow the new weapon will belong to him.

There is only one new factor in the techniques of war that remains superior to all other inventions—the infantryman, the eternally young child of war, the man on foot, the only and the eternal, the one who sees the whites of the enemy's eyes.

Field Marshal von Moltke's comment is as viable today, I feel, as it was in 1866. The infantryman will survive because he must.

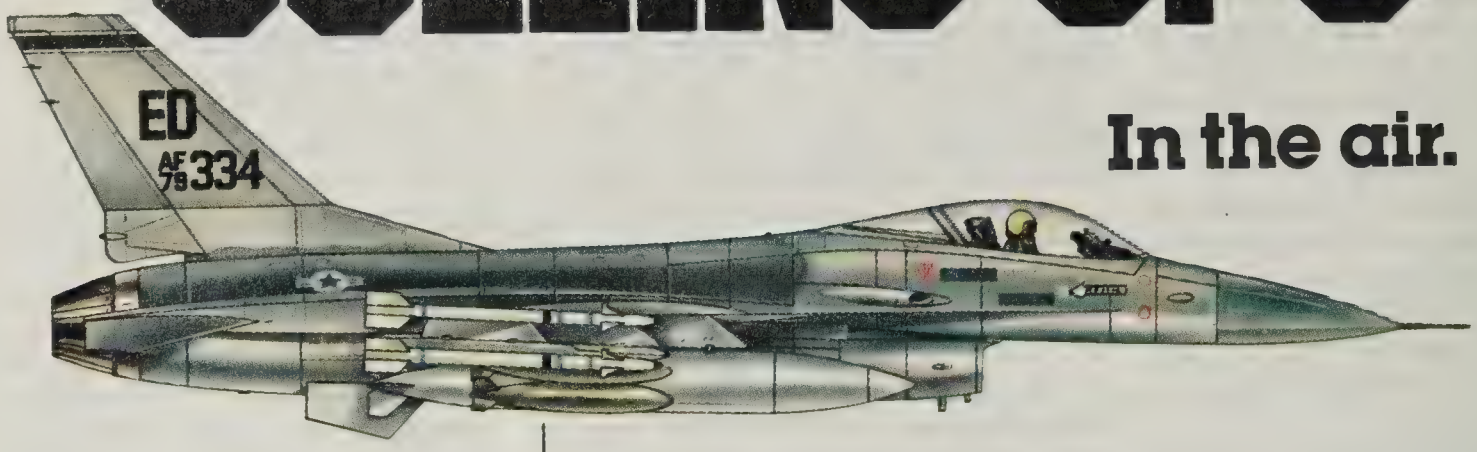
1ST SGT. WAYNE J. VOTER
U.S. Army, retired
Columbus, Ga.

Called on Anecdote

■ I am disappointed that you printed the anecdote, "Idiocy in Action" (June), presenting the Army Medical Service in such a derogatory manner when the truth is that this custom of requiring that appointments be made by telephone is widespread and done for a very good reason.

When a patient comes in person for an appointment it usually means he or she has had an appointment in a clinic; they think while in the area they will make an "impulse" appointment. What happens

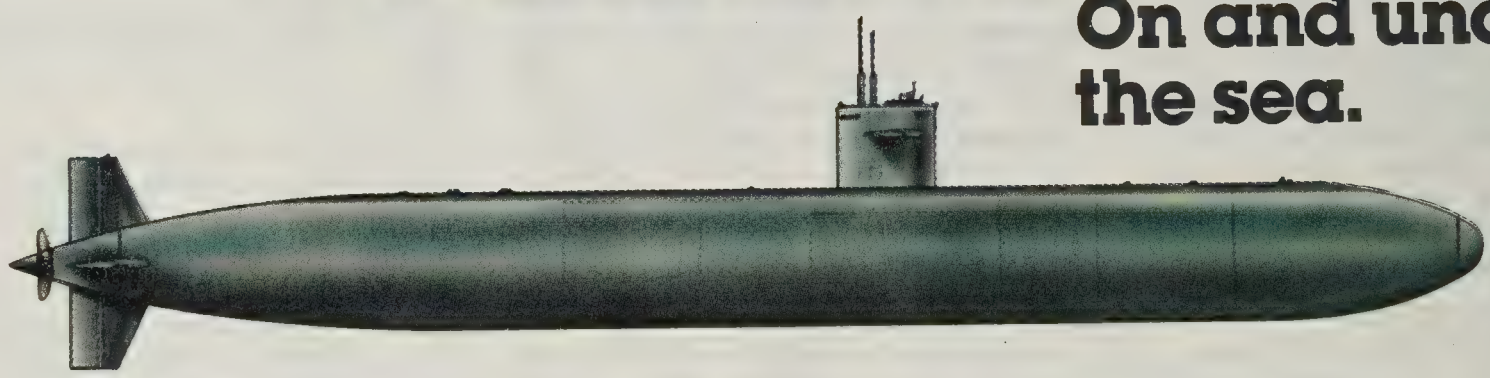
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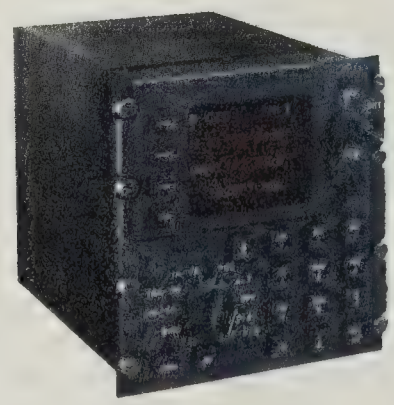
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then is that, after arriving home, they promptly forget the appointment. This wastes appointment time.

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This allows the health facilities to operate much more efficiently and in a more cost-effective manner.

Lt. Col. Charles W. Dobson
U.S. Army, retired
Asheville, N.C.

Contributions Requested

■ I am working on a unit history of the 7th Infantry Division Artillery and would like to ask for the assistance of Army magazine readers. I would like to hear from those who have served with any element of the 7th Division's artillery units from 1917 to the present. All contributions will be acknowledged and returned if requested. This is an official project of the 7th Infantry Division and Ft. Ord Museum, and has the approval of the curator, Margaret B. Adams.

1st Lt. John A. Makar Jr.
10220 Pelham
Taylor, Mich. 48180

Synchronization: A Means Only

■ Gen. William E. DePuy's article, "Toward a Balanced Doctrine" (November), is a useful contribution to the discussion of maneuver warfare. Against competent opponents, maneuver warfare will involve "hard, bloody fighting." To win, you must have unity of effort. You must forge all types of combat power into a single whole. As Gen. Heinz Guderian often said, *"Klotzen, nicht kleckern"* —clobber them, don't jab at them.

The question is how unity of effort is to be achieved. Gen. DePuy recommends synchronization. But, as he notes, synchronization is often understood to mean careful and time-consuming preplanning. In some cases this is a viable approach; there are sometimes set-piece battles. But he seems unclear about what to do when the time synchronization requires is lacking.

He cites the Air Force's current inability to go through its elaborate synchronization process for battlefield air interdiction without arriving on the battlefield too late to be of any use. But he then describes a "perfect operation" in terms that imply just the type of detailed planning that makes the Air Force too slow.

How do you achieve unity of effort when the press of time, unexpected actions by your opponent, errors by your own subordinates and overall friction make time-consuming synchronization infeasible? Friction, after all, is the primary invalidator of synchronization. The answer lies in three concepts central to maneuver warfare: *Auftragstaktik, Schwerpunkt* and agility.

Gen. DePuy mentions *Auftragstaktik*. Its essence is that the subordinate understands his superior's intent: what result his superior wants, what he wants to have happen to the enemy. The subordinate must understand this two levels up; for example, if he is a company commander, he must know what result his brigade commander wants. Then, whether or not communications fail, he does what he thinks necessary to achieve that result. Rightly characterized as "trust tactics," *Auftragstaktik* trusts the subordinate to adjust his means to changes in the situation as it unfolds, always with reference to his superior's intent.

As Gen. DePuy notes, there is more to achieving unity of effort (for that is the goal; synchronization is only a means) than *Auftragstaktik*. The concept of *Schwerpunkt* is also central. The commander designates as his *Schwerpunkt* the unit with which he will attempt to achieve a decision. All other units under his command are told which unit is the *Schwerpunkt*, and all are expected to do their utmost to support it.

Sometimes, they will be told what to do, at least initially (few plans last beyond initial contact). At other times, they will be left to decide for themselves. But they will always make their actions support the *Schwerpunkt*. As John Boyd has noted, *Schwerpunkt* is an essential "glue" that holds everything together to ensure unity of effort. It gives the subordinate the knowledge he needs to produce the intended result of synchronization when preplanned synchronization itself is not possible.

Finally, unity of effort depends on agility—one of the central concepts in the new *FM 100-5*. Agility means, quite simply, the ability to adapt quickly as circumstances change. Looking at unity of effort, it means subordinates' ability to adapt their actions quickly to support the *Schwerpunkt* and their commander's intent as the situation changes. It is the means by which unity of effort is maintained in the face of uncertainty and rapid change, including when the plan on which synchronization was based breaks down in the face of the unexpected.

Because events may cause synchronization to break down even in cases where time originally permitted it, it should never be used as a replacement for *Auftragstaktik, Schwerpunkt* or agility.

Synchronization can be a useful tool in some cases, but it is never more than that: a means, not an end. The end, a vital end for victory, is unity of effort—a unity that often will appear clearly only in retrospect.

As long as synchronization is understood that way, it is helpful. If it becomes an end in itself, one that must be served regardless of how much time it requires, then it is a prescription for a slow observation-orientation-decision-action cycle and a descent into attrition warfare.

William S. Lind
Washington, D.C.

By the Numbers

■ We were visited recently by a couple from France. My friend, Lionel Vessiere, was particularly impressed with the contents of a wall plaque I have carried with me for many years.

During my 37 years in the Army Corps of Engineers and Army logistics, I found the "excuses" list on the plaque true to life, although I would not necessarily agree with the order shown. Active-duty military may find the list (however ancient) worthwhile in their day-to-day relationships:

Please, To Save Time,
Give Excuses
By the Numbers

1. That's not my department.
2. I didn't know you were in a hurry.
3. No one told me to go ahead.
4. I'm waiting for an O.K.
5. I forgot.
6. I didn't think it was important.
7. I've been too busy.
8. I thought I told you.
9. I wasn't hired to do that.
10. Wait for the boss and ask him.
11. We've always done it that way.
12. That's his job, not mine.

Lt. Col. A. C. White
U.S. Army, retired
Woods Cross Roads, Va.

The Answer

■ For a good many months I have wondered why John Berger used the term "anti-German racists" in his otherwise good letter advocating the adoption of the Kevlar helmet ("'Fritz' Okay," "Letters," May).

I think I have finally found the answer: Mr. Berger hates bigots.

Cullen Gulko
Sparks, Nev.

Observations Misunderstood?

■ I was surprised at the vehemence of 1st Lt. John J. McGrath's response ("IDF Defense," "Letters," August) to my article, "Close-up View of IDF Models Offers Sharper, Truer Image" ("Front & Center," March). I was more amazed at how much he read into the article rather than his lack of understanding of it.

There are several points that he fails to understand. As I write from a point of "having been there" and he cannot, I find it rather hard to lend any credence to his comments. In fact, his letter seems

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more an *argumentum ad hominem* than a critique of what I wrote.

Since he infers that I "fail to understand" the historical (professional) reasons for studying the IDF, I seriously doubt his claim to have known me from the officer's advanced course when I was an instructor. If he had been a student in the classes I taught or the briefings I gave to the infantry officer advanced courses, he would have remembered the historical examples presented to illustrate various teaching points.

For example, I researched the historical example for the block of instruction entitled, "Light Infantry Defense Against Armor" (the battle at Targul Frumos, May 1944). More specifically, during the briefing that another captain and I gave on the IDF, we talked about the historical value of studying it. In closing we stated the following:

> Bringing this briefing into perspective, we must take a hard look at possible operations for U.S. forces in the Middle East in the future. By studying and relating to you the organization, training and combat operations of the Israeli Army and by explaining how terrain and experience have impacted on those concepts, we hope these considerations will come to mind during your preparation and training for warfare in a desert environment.

Lt. McGrath's point that "their success should be admired and studied" I wholeheartedly endorse, but, again, much of the move to emulate the Israelis is made solely on the basis of their success, with little consideration of other factors. I feel I'm able to analyze the factors because I now know some of the facts behind them.

My remarks concerning the junior officer being disrespectful to a senior were meant to cite an example of something I witnessed as a common occurrence, an occurrence not common in the U.S. Army. By Israeli standards it might not have been as serious a breach of courtesy as I deemed it, yet it illustrated, as Lt. Col. J. Biran stated in his letter (August) " . . . that in Israel conventional courtesies do not have the same emphasis as in the United States, and a natural derivative of society's behavior is the mode of behavior of that society's army."

My analysis is that such conduct stems from the egalitarian system promoted by the first-name relationship and lax military courtesy which exits between juniors and seniors, not, as Lt. McGrath says, from the incompetence, laziness or inadequacy of the senior. The particular case I cited dealt with a lieutenant arguing in public with our course commander, a colonel, whom I consider a fine officer and who has since been promoted. (The lieutenant was reprimanded, by the way.)

His criticisms regarding my comments on Israeli technical orientation ("sophistication"), unit sizes and the NCO corps are based on material taken out of context. His argument is confusing, as he mixes up technical orientation with unit sizes and span of control.

As I stated, Israeli officers need not be as technically oriented as we are because they operate under a much less complex and more austere system.



They do not have the same massive management problems we have with worldwide commitments, deployments and stationing of units; nor do they have requirements for the great amount of administrative actions with which we are burdened.

From what I observed, the most complicated thing with which Israeli company commanders work is the morning report. I doubt they keep counseling files, voter registration papers, reenlistment cards or deal with large volumes of maintenance paperwork. I'm sure those of us who have been company commanders in the U.S. Army would welcome the luxury of doing just the equivalent of a morning report.

My statement about smaller units was taken out of context; however, I agree with what Lt. McGrath says about the "Division 86" organization being based on a higher leader-to-led ratio. The Israelis have smaller units primarily because of different factors. Their leaders are much younger and have less initial training than ours. Their span of control is kept narrow to make it easier for them. Their leaders' training can be made correspondingly simpler with smaller units.

I was not "shocked" to see Israeli officers eating before their men; I expected it. My observation was that we normally do not do so under the same circumstances for the reasons stated in the article. I did not state, as Lt. McGrath alleged, that "immaculate barracks and spit-shined boots" are "better indicators of how well the officers care for their troops." Our standards require that officers provide soldiers with a clean, sanitary, comfortable place to live. I have never, in my experience as an enlisted soldier or officer, seen a U.S. Army barracks in the state of uncleanliness I saw in Israeli barracks.

My point is that we would not, in our society or our Army, allow such standards to be tolerated by officers in caring for their troops.

Finally, Lt. McGrath's comment about the Marine company commander who stopped the Israeli tanks in Beirut was purposely misleading. Yes, the tanks were stopped inside the Israeli area of responsibility but on an access road into the Marines' sector which they had violated before. They were prevented from reaching the Marine checkpoint on the access road and turned back before penetrating Marine lines. The Marine officer had every right to expect them to violate his area of responsibility again and took the only action the Israelis understand, *decisive action*.

Lt. McGrath should read my article again to understand what I have really said. I'm sure that if he speaks to anyone who has worked with the Israeli Army in the Middle East they may make many of the same observations I have.

CAPT. EDWIN L. KENNEDY JR.
College Station, Tex.

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Finally, A Nation Remembers

The Sentinels Who Watch Over Roll of the Fallen

Their expressions are almost serene, not tense with battlefield emotion, dashingly heroic or exultant with victory, the way fighting men usually are depicted in monuments honoring war dead. Helmetless, their battle dress in casual disarray, they gaze calmly in the direction of the low, black granite wall upon which are enscribed the names of some 58,000 Americans who lost their lives in the Vietnam war.

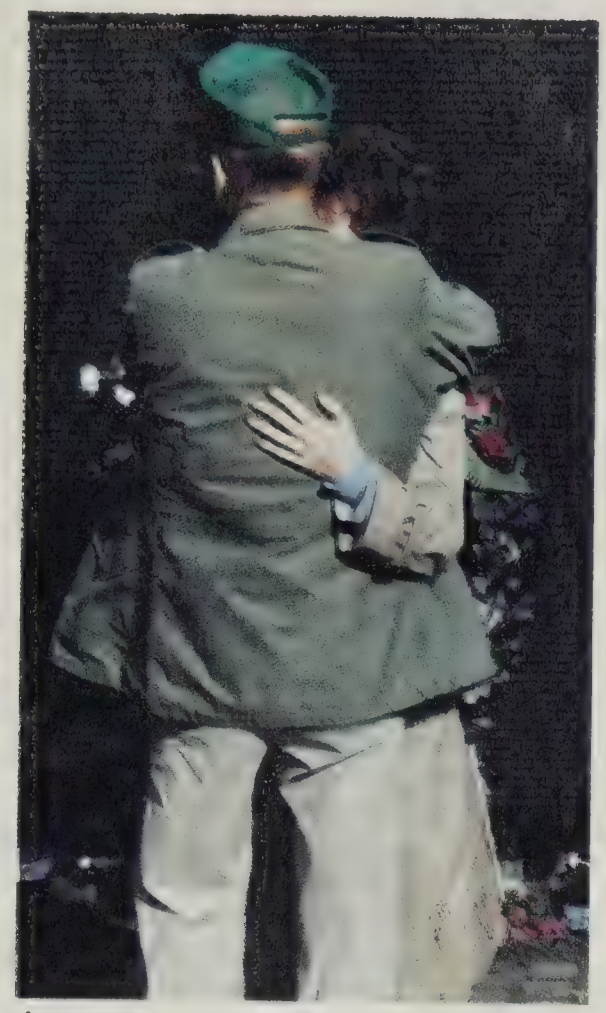
Front & Center

It is a profoundly disquieting tableau, although it is probable that the reasons beholders find it so are as varied as their views about what has been called the most divisive conflict in our history. To some, the youthful faces may appear troubled. Deep sorrow, abject weariness, tranquility, heroism, resentment—as is so often true when an artist has created well, the range of justifiable interpretations is broad.

Unveiled in November as a complement to the somber slash carrying the roll of the Vietnam dead, this work of sculptor Frederick Hart has been hailed as a symbol that the grievous wounds suffered by the country as a result of the war have, at last, been healed. The figures, which were not part of the original plan for the memorial, were needed; the cold, stark wall, itself a strong statement about the war, was not enough. Names and polished stone did not fight in Vietnam's jungles; people did.

There was a large outpouring of national emotion when the wall was opened to public viewing in November 1982. Despite controversy over the feelings of some that the mood struck was one of shame rather than tribute or gratitude, the wall is a spellbinding monument in front of which many tears have been shed by the thousands of relatives and friends who have found their way to the peaceful setting in which it stands.

The feelings that greeted the unveiling of the figures seemed to be more unbridled, less burdened by tension than that which took place at the wall. Visitors wept, placed flowers and traced the names of loved ones with their fingers, but the three watching figures seemed to have added a dimension that heretofore had been lacking: the names etched on the wall had faces.



Is the stirring memorial a symbol that the nation has bound up its wounds, that we have indeed repaired the war's terrible damage? With all due respect to the significance of this moving monument, this is not the first time that we have done something and labeled it the overworked "binding up our wounds." Abandoning South Vietnam, ending the draft, granting amnesty to draft evaders—each was hailed widely as the balm that would make us whole again. It has never been clear just what is supposed to happen when this event takes place, but it is plain that none of these developments contributed appreciably to bringing opposing factions together.

Symbols and slogans were important ingredients in the turbulence that nearly tore the country apart in the late 1960s and early 1970s. The peace symbol, more a sign of defiance to order than a badge of serenity, was as visible as the flag. The chant, "Hell no, we won't go," meant much more than just that the shouters were against selective service. If a symbol made of granite and bronze has such healing powers, great. Over ten years is too long a time for any segment of the nation to be out in the cold.

What seems more likely is that there was no wondrous coming together. The country that read about the sculpture or watched the opening ceremony is not the one to which our Vietnam veterans had returned home in the early 1970s. Polls show that the military is one of our most respected professions and patriotism has as much support on a college campus as it does at a Fourth of July parade. It is no longer a shame to be strong militarily, and there are even books coming out on the Vietnam war that are not based on the premise that we were bloodthirsty aggressors.

If the memorial has meaning beyond its tribute to Vietnam's veterans, it is that it reflects the way America feels about those who died in its service. Twelve years ago, it would have been picketed and smeared with slogans.

Because the turbulence has died down and there is unity again does not mean that everything has been put neatly back in place. There are still widespread feelings of guilt among many of those who served in Vietnam, a guilt that was instilled by people in the nation that sent them to war. The general who commanded them in Vietnam, as honorable a soldier as ever fought for the United States and who has suffered much of the brunt of the abuse that was heaped on our Army during and after the war, sat recently in a New York courtroom and was asked by a lawyer about a magazine article which suggested he could be tried as a war criminal.

Nor has the weird logic that motivated the Vietnam-era antiwar spokesmen completely died out. A prominent newspaper columnist, commenting on the planned erection of a Vietnam memorial in New York, declared that it should not honor just the veterans but all the elements who were in one way or another affected by the war. Cited were those who fought not in the conflict but against it, those who fled to Canada or underground to stay out of uniform, those who waved Vietcong flags in rallies and, in general, treated their own country and the people in its armed services as the enemy.

Mentioned again was that always infuriating thesis that those who rebelled against going to war were as courageous, or more so, than those who did, and thus were as deeply scarred as those who fought in Vietnam. Similar sentiments have been voiced about the Washington, D.C., memorial.

Nuts. Let those who fought, were wounded, died or just wore the uniform when the country needed them have their memorial and spare them the crowning ignominy of having to link arms symbolically with elements of our citizenry which despised them when the issue was the war.

It's little enough and it's about time.

LJB□

No Place for a 'Col. Bull'

In Active Pursuit of Excellence

By Lt. Col. David T. Twining

Col. Bull was a feared and hated man. When he reported to his new office as division director, his reputation had preceded him. After one week on the job, everyone knew it was true: he was a mover and shaker of the worst kind. Rumors actually reached the Pentagon that someone had jumped from a second-story window to escape his grasp.

Col. Bull earned an unenviable reputation as a man who could squeeze "fat" from any organization. People who had only casually appeared for work were now at their desks early. Those considered unnecessary to mission accomplishment found their desks in the hall. In short, the place hummed as never before.

While word of Col. Bull's accomplishments spread far and wide, that which was usually heard accentuated the negative. Reductions in manpower, miles and millions were of little significance compared to the human costs of Col. Bull's ruthless ways.

Some observers and two successive promotion boards saw merit in what had been accomplished: leaner, more efficient operations, a quick response to customers and a new receptivity toward change. Col. Bull had taken off the gloves, hit hard and moved on. He knew his business, and the short-term results of his efforts were impressive.

The contemporary era of Army operations has little place for a Col. Bull, a person who destroys others to achieve a veneer of organizational effectiveness and mission accomplishment. However, the problem of adapting organizational structures to meet current needs poses an ever greater challenge to Army military and civilian leaders.

Constrained resources; functional, technical and organizational complexity; and poorly defined, multiple missions continue to sap the energy, resourcefulness and preparedness of those who joined the Army expecting to find something better. Institutional, administrative and operational constraints have so bound the Army that it is said to be moribund, captive of a force larger than itself. Is this reality or does this reflect inertia, complacency and the comfort of certainty over risk? The Army of excellence was a deliberate decision to pursue high goals more effectively than previously, making maximum use of the totality of available resources to accomplish the Army mission.

Some mistakenly interpreted this to mean being especially nice to one another, having all soldiers and materiel present a good appearance, or seeking the attainment of various quantitative measures of proficiency and efficiency. To the obsolete leadership style of Col. Bull, this meant the smashing of heads; to less decisive leaders long defeated by the triumph of form over substance, this meant moving a few partitions and perhaps an office or two.

Neither approach is satisfactory. The Army of excellence has placed in the hands of leaders at all levels the tools for its achievement. The means are available, but is the will?

Will, as defined in *Webster's New Collegiate Dictionary*, is the "power of choosing and of acting in accordance with choice." In a larger sense, it is the disposition to act in accordance with certain ideals or principles, as the will to live, the will to achieve, the will to excel. The assertive, directive meaning of will is the essence of the problem of mobilizing the means at our disposal to achieve ends for which we are responsible.

This calls for leaders of all grades, in and out of uniform, to adopt a new receptivity toward change and innovation, an adaptability to new conditions and a willingness to experiment and take risks. The 9th Infantry Division (Motorized) high-technology derivative represents a major commitment in this direction. The adoption of "Division 86" and the light infantry division are others.

To adapt to change as the primary constant of a rapidly shifting strategic environment, leaders must:

- Challenge the assumptions upon which organizational structures and methodologies are based.
- Question not only the manner but the necessity of a function or activity.
- Judge activities by their contribution to the unit and organizational mission, to include the mission of higher units.
- Adopt an attitude of healthy skepticism toward both quick fixes and old solutions.
- Ensure that those responsible for a task are given the authority for its execution.

The will to approach organizational questions constructively and to adapt past strictures to present challenges lies within all ranks and positions. However, it requires that leaders focus on the long-term effects of short-term economies, that leaders not simply negotiate conflicts be-



"Don't you think you've had enough, Pvt. Simms? The last two toasts you drank were to your sergeant."

tween organizations but act resolutely to reduce overlap, clarify fuzzy charters and eliminate underemployment of people and underutilization of resources, and that they take the time and effort to realign tables of organization and equipment and tables of distribution and allowances to reflect changes made.

It also means that suggestion systems must work and that suggestion committees take their duties seriously. It means that inspector generals must actively advise, assist and, if necessary, assert if clearly defined standards are to be maintained.

It means that the professional development of all soldiers and civilians be actively pursued, both systemically and individually, in concert with organizational effectiveness, equal opportunity and other staff resources. And, for those uncertain of what they are to do or how it is to be done, that Training and Doctrine Command show the way.

To some extent, these things are being done now. The enduring question is, can they be done better?

All this takes a certain toughness, persistence and strength of character; some issues must be elevated to those with the authority to act. Command support for difficult decisions can mobilize the abundance of talent and will to excel we all know is there. So will performance counseling and appropriate comments on enlisted efficiency reports and officer evaluation reports. All of us command resources and all can contribute to the Army of excellence if we but exercise the will to do so.

Vigor is the "intensity of action or effect." It represents power and strength of body and mind, acting with force and energy. The call for organizational vigor is a strong and demanding one. The Army is not a candy store; getting by will not suffice for getting on. The era of muddling through is over. The case is not leadership versus management, but the leadership of managerial activity, a leadership sensitive to human needs and fulfillment, acting in fairness to both the taxpayer and the soldier. □

LT. COL. DAVID T. TWINING is an Army Fellow in the National Security Program at the John F. Kennedy School of Government, Harvard University.

This Month's Cover



U.S. troops who fought in Vietnam are immortalized in this grouping of figures by sculptor Frederick Hart. Unveiled in November, the sculpture is located near a wall in Washington, D.C., which carries the names of those who died in the war. The verse is from a poem which was carried in ARMY magazine and was written by an anonymous soldier who reportedly later was killed in action. In the poem, the soldier wrote that, although he might die, his spirit would live on. *(Photograph by Rudi Williams)*

Morale Support Activities— 'A Resource for Readiness'

By Col. Earl S. Greason III

Readiness and morale are indeed full-time endeavors as Lt. Col. Arnold Daxe Jr. pointed out in "Readiness, Morale a 24-Hour Job" ("Front & Center," June). His recommendations for solving "5-9" or off-duty problems are good, but he overlooks one major factor: constructive use of leisure time and the resource available to provide for it—morale support activities (MSA).

Over 50 percent of all unit indiscipline problems could be solved or avoided if platoon, company, battalion and brigade commanders availed themselves of the programs and services offered by installation morale support activities. The eight MSA core programs are:

- Youth activities.
- Arts and crafts.
- Entertainment.
- Libraries.
- Sports.
- Outdoor recreation.
- Bowling and golf.
- Recreation centers (including information, tour, travel [ITT]).

These programs offer a wide range of leisure activities designed to accommodate a variety of interests.

Morale support activities appear to be the most overlooked, underutilized and least appreciated resource for maintaining morale and providing constructive



alternatives to substance abuse and other counterproductive off-duty behavior. Why is it that the Army mind refuses, in many cases, to acknowledge that recreation is one of many tools for increasing on-the-job productivity, unit *esprit de corps*, a sense of community and, ultimately, combat readiness? The Air Force and Navy are years ahead of the Army in their recognition of the role well-directed and creatively managed recreation programs play in maintaining discipline and unit and family cohesion.

Between 5:00 P.M. and 9:00 P.M. each evening of the week, every day of the year, on every Army installation around the world, any number of MSA programs start—a musical production rehearsal, a softball game, a ceramics or leatherworking class, an aerobics session, a sport parachuting ground school, a pool tournament, a chess exhibition, a youth soccer practice, a computer group meeting, a theme costume party—the list goes on in infinite variety.

How many first sergeants and company commanders know what MSA activities are available on any given weeknight or weekend on their post? How many of these same leaders promptly and routinely post the MSA activity calendars, flyers, posters and other publicity materials they receive? How many announce upcoming MSA events regularly at formations? And, perhaps most important, how many noncommissioned officers and officers lead by example, making it a point to participate in, volunteer for and use MSA programs and services?

The chain of command's attitude toward MSA, starting with the division or brigade commander, is an important factor in influencing participation. If it is "my men don't need recreation—they're trained to be soldiers 24 hours a day" or "real soldiers don't go to recreation centers or crafts shops," then it is likely that the morning report will reflect this, high AWOL rates will reflect it and low test scores and poor inspection results will reflect it.

Generally, low morale, lower productivity and indiscipline will reflect an outmoded, insensitive and unenlightened command style. An authoritarian approach to correcting job and behavioral deficiencies may work, for a while, but the recurring discipline and morale problems will be inherited by the next group of NCOs and officers who move into the unit.

The following recommendations for unit leaders are based on the use of MSA

to correct indiscipline problems in units at the company, battalion and brigade levels:

■ Army service schools and training centers must prepare leaders to deal with leisure—their own and that of the soldiers in their command and soldiers' families. The amount of time for leisure activities a peacetime Army affords its members is considerable. Potential commanders at all levels must thoroughly understand not just what MSA is and does, but what the whole concept of morale, welfare and recreation involves, and how that concept relates to leadership abilities and unit combat readiness.

■ Unit leaders should actively seek out the morale support officer (MSO) on their post and his staff. Invite them to the unit for a "show and tell" or arrange for groups of soldiers and their families to take a familiarization tour of post MSA facilities. This is particularly important for newcomers within the first 45 days of their arrival at an installation.

■ Have MSA staff members program and organize unit functions on holidays and organization days. Recreation center staff members are excellent party consultants—that is their job. Functions do not have to take place in the recreation center facility (although they can); they can be held at picnic areas, parks, housing areas or fields on or off post. Activities can include sports competitions, talent shows and other events to include family members of all ages.

■ Ask the ITT staff to arrange special unit tours. Tours for spouses, singles, families or units are all within the scope of the ITT mission. Tours can be used as rewards for low AWOL rates or as incentives to do well on field tests and inspections.

■ Participate as a unit in MSA programs. Participating as a unit means that senior NCOs and officers participate as well.

■ Offer to volunteer the unit to undertake some program or maintenance project for MSA. There are playing fields to be maintained, buildings to be painted and areas to be beautified. On some posts there is a "big brother" program in which a unit is directed to support a particular MSA program such as youth activities, scouting or outdoor recreation. Volunteers are always welcome to assist with theatrical productions, carnivals, marathons and other large-scale community events.

■ Give positive reinforcement to individuals or groups who practice constructive leisure habits. Publicly recognize champion athletes, prizewinning writers, musicians or artists in front of their superiors and their peers. Never degrade those who choose to follow nonathletic leisure pursuits.

■ Offer a point system program for individuals who volunteer as coaches, officials or drivers for the youth activity sports program; for those who volunteer as program aides, cooks, instructors or chaperons for the scout program or teen center activities. Set up a point system with MSA for incoming soldiers who try an activity in each of the MSA core programs within 120 days of their arrival. Accumulating a certain number of points could result in a free ITT tour or bowling pass.

■ Create a special "off-duty" leisure activities bulletin board in the unit's most highly trafficked area. Assign a creative person within the unit to collect information about on- and off-post recreational activities and to keep the bulletin board current. Perhaps rotate the responsibility between platoons or squads. If the MSA staff is not sending publicity to the unit, someone should request it and let the MSO know that the unit wants to be on the MSA publicity distribution list. Establish regular information announcements about upcoming MSA events during midday formations when attention spans are longest.

Recreational activities provide balance in life. The old axiom, "All work and no play make Jack a dull boy," is well taken. No one is a soldier 24 hours a day (in peacetime). Whether one is Commander in Chief, a three-star general, a master sergeant or a private, there is something to enjoy doing when not on duty.

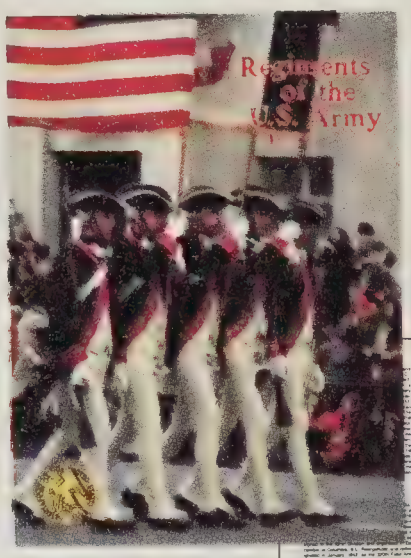
There is something each soldier does to release frustration, work out aggression or use pent-up energy. He may enjoy an activity because it brings peace of mind, restores mental energy or relaxes him. It might build new skills, teach the soldier something about himself or help him better relate to the world around him.

It is the job of NCOs and officers to make sure that, for the soldiers under their command, the "something" is not drug or alcohol abuse, vandalism or more serious crime, fighting or going AWOL. Recreation offers something for everyone and an opportunity to develop healthy leisure life-styles. Let us not overlook morale support activities as a resource for readiness. □

COL. EARL S. GREASON III is chief of staff, Office of the Adjutant General. He holds a master's degree in personnel management from Central Michigan University.

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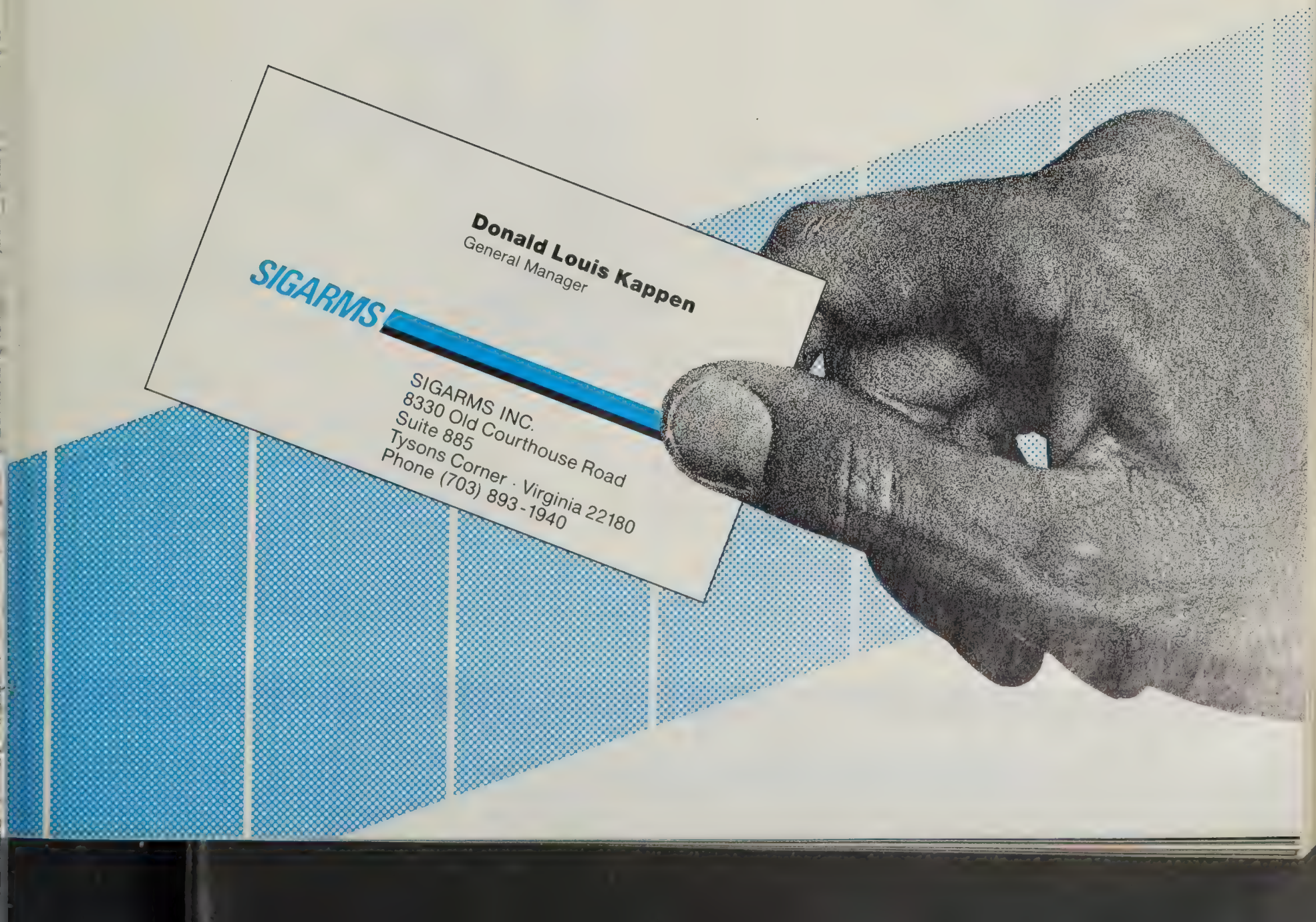
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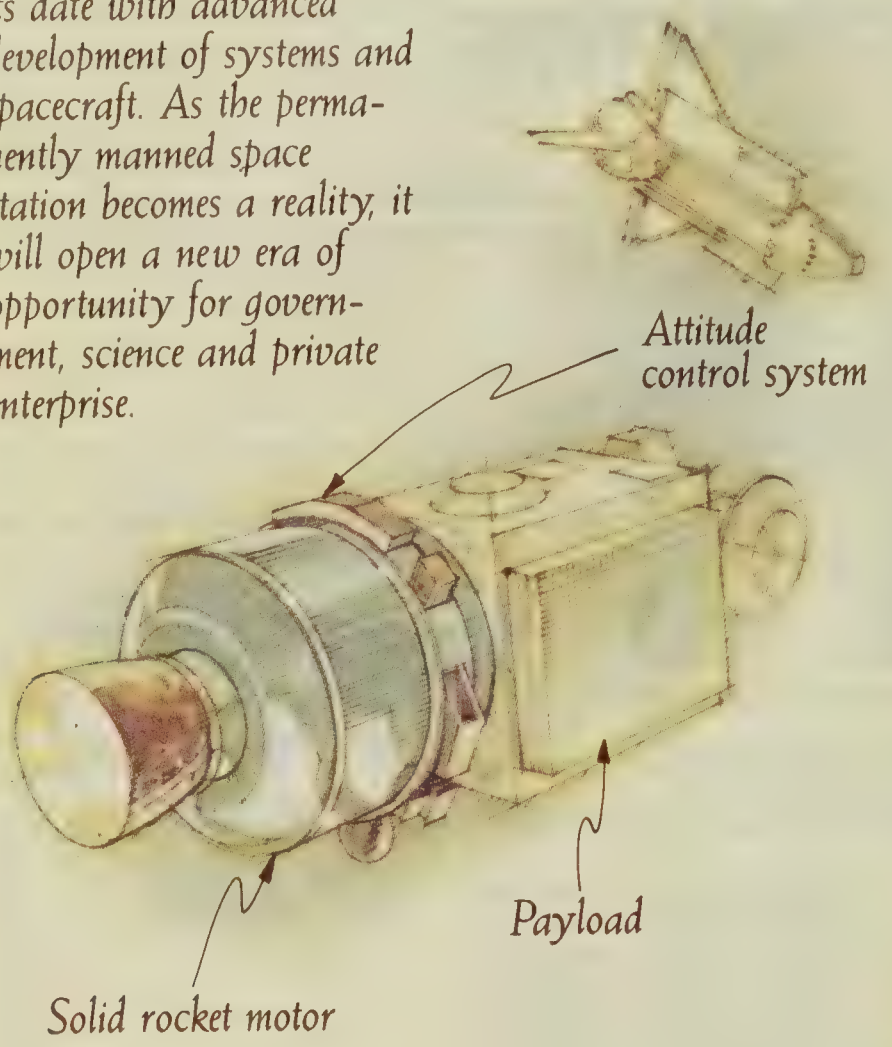
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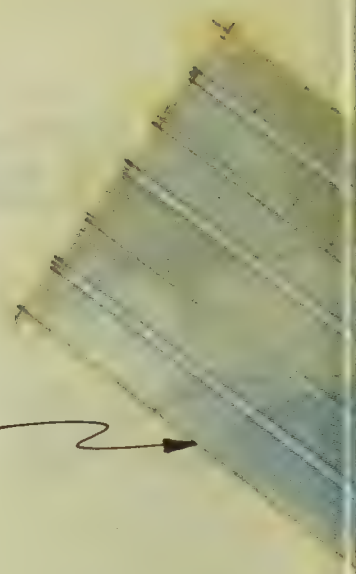
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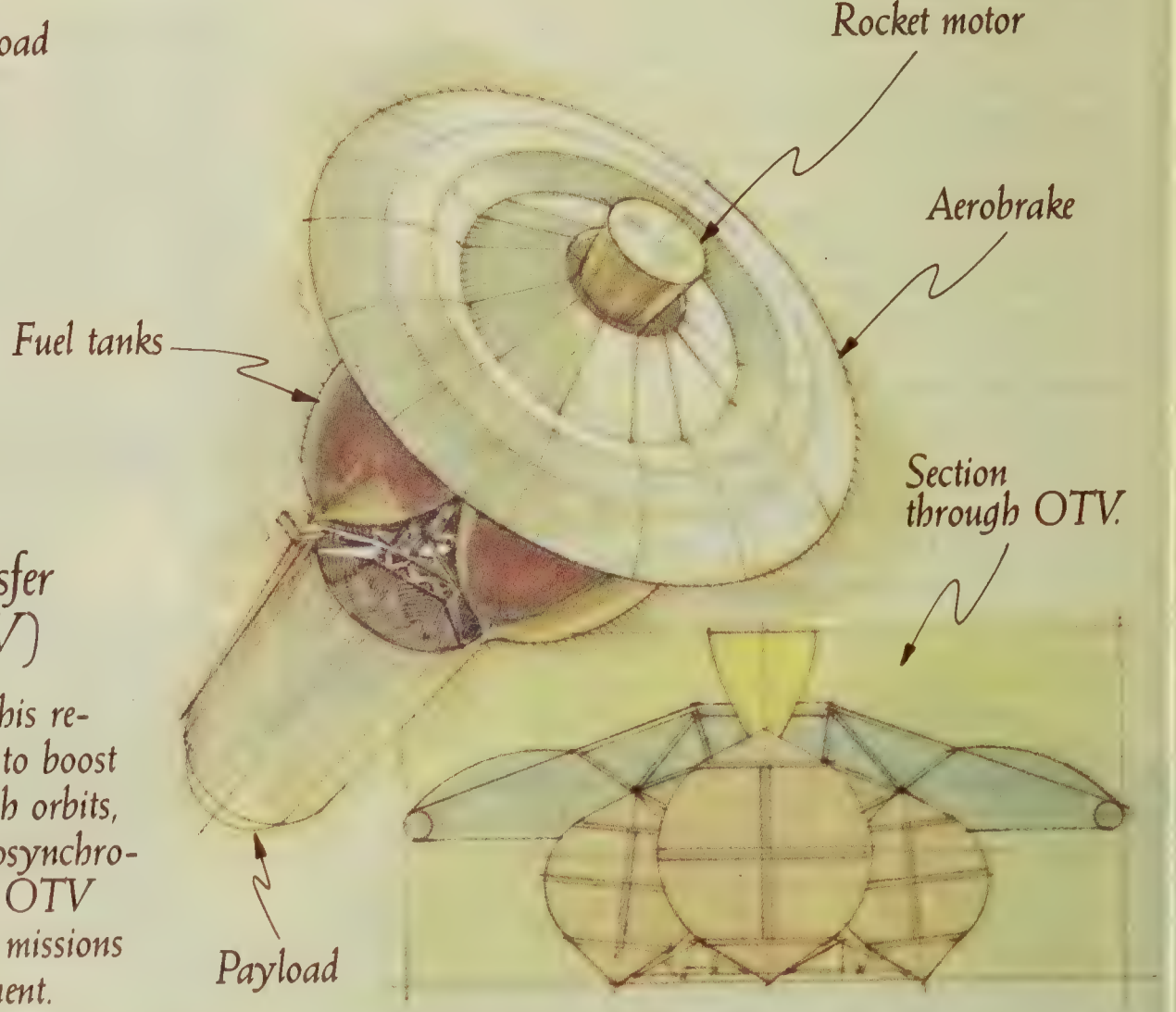
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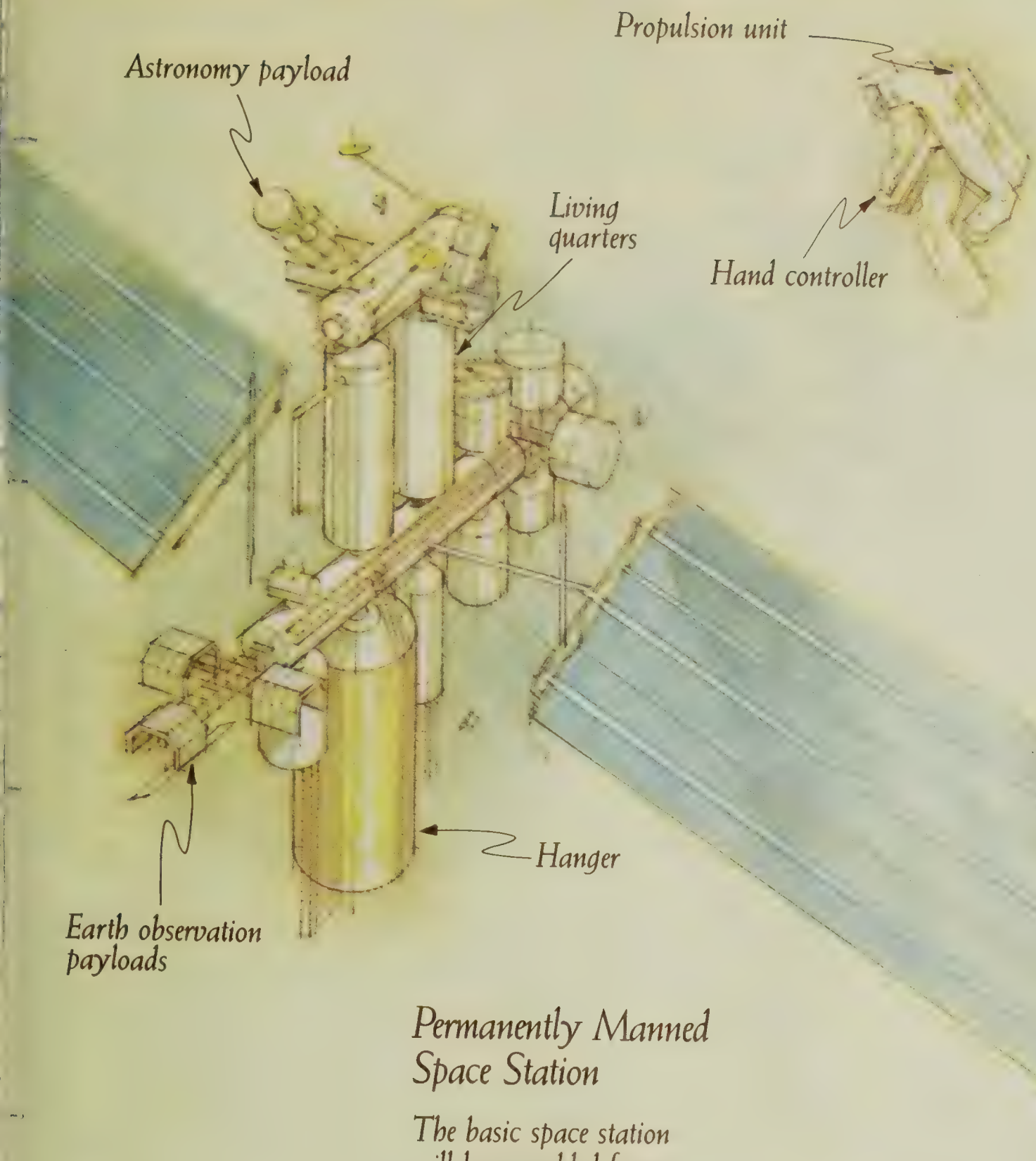




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Stewing Over Stereotypes

Army Cooks Need Appreciation

By Trish O'Neill

After his third duty station, I think he finally realized that the frustration he felt in his job was not because of a badly organized kitchen or an uncaring mess sergeant (although two of three qualified), but because of the job itself. He loved to cook and had held a job as a cook before he enlisted in the Army. Any other occupation would not have suited him as well.

But there are differences, large ones, in cooking in a civilian restaurant and cooking in an Army dining facility. In a restaurant, the chef cooks a wide variety of foods that are pleasantly decorated on individual plates for probably no more than 50 people. In an average dining facility, the cook prepares a small variety of foods, according to an Army recipe card, which are served from stainless steel trays on a steam table for 200 to 400 hungry soldiers.

In a civilian restaurant, the diners are there out of choice, while in a dining facility, the majority of the men and women are there because they do not have an alternative. In a civilian restaurant, the employees are there because they must make a living, and the only way for them to ensure job security is by doing a good job.

In Uncle Sam's restaurant, the Army has committed itself to employing the same people for at least two years. Although they can be reprimanded, their employer is still going to give them a place to sleep, an allowance and a meal card. Performing a job at one's own speed (no matter how slow) is allowed as long as the mission is accomplished. If an employee claims ignorance of the way to make a particular item, the task is usually delegated to someone who does know how to make it; after all, "chow" is going to be served in half an hour and there is no time for teaching.

A dining facility's primary mission is to satisfy a soldier's appetite in order for him to be able to perform his job correctly. And this is the core of the Army —those soldiers who must be combat-ready at all times. While I respectfully applaud these brave soldiers, I realize that this mission is why the long hours an Army cook works—sometimes 14 days without time off—are unappreciated.

The stereotypical image of the Army cook has pervaded society for decades: Army food is slop, therefore its cooks are slop. How many television programs have displayed this image? One celebrated Army situation comedy was applaud-



ed for years because of its sensitivity in dealing with vital issues, yet in practically every episode, each exhausted doctor would hold out a plate to some dirty-looking cook who would spoon a mound of slop onto it. The doctors always made jokes about the food and the cook was always portrayed as some dumb slob.

So where does a dedicated soldier who loves to cook and is good at it fit into the picture? Frankly, he does not. If he shows initiative, he is often the one who gets stuck doing the jobs that others claim they cannot do. He is also the Army cook who is qualified for a choice duty assignment cooking for a high-ranking officer, but is "too valuable" to be released from his present duty assignment. It is no wonder that this dedicated cook soon develops a bad attitude, knowing that his job is neither rewarding nor appreciated.

It is obvious to me that this occupation needs to be better defined. The concern for the troops is admirable, while the neglect and lack of concern for the welfare of Army cooks is despicable. They are the most abused and unappreciated people in the Army. Try to replace those Army cooks with civilians working under the same conditions and see how fast the turnover is.

Current attitudes toward cooks, from the new recruit to the company commander, must be changed. Only then can a viable and productive dining facility serve the troops effectively and not at the expense of Army cooks. □

TRISH O'NEILL is a free-lance writer living in Enterprise, Ala.

The Expert

Every unit has one soldier who has been everywhere and done everything; ours, in the 371st Medical Detachment, was better than Audie Murphy, according to him. He had spent a full tour in Alaska, one in Korea and one in Germany. He had gone through a 16-month med course, air assault school and spent time in Missouri as a Redeye operator (with a 92B military occupational specialty); not bad for three years of active duty.

This particular specialist greeted my arrival in the unit by telling me how bad things were for the troops in Vietnam. I guess he thought the 1st Cavalry patch on my right sleeve was a mere idiosyncrasy.

In spring of 1983, a new commander was assigned to the unit and field training became high priority. I had been instructing my charges on the finer points of living in the bush for several months and was anxious to show Lt. Yergin what we had accomplished. The unit set up a defensive perimeter and the lieutenant went from position to position asking why they had picked their spots and the advantages and disadvantages of each. Everyone had solid reasons for their choice and could see some disadvantage, although their choices were better than the alternatives.

My favorite specialist was to be last. When the C.O. and I went to find him, he was nowhere in the designated area. We came across him after ten minutes of searching, 500 meters outside the perimeter. His "hole" had heavy brush within three feet of each side and no fields of fire. A cliff hung over the hole ten feet away and a sheer cliff dropped away on the opposite side. A scraped road was 20 feet to the left and a thick hedge to the right.

"Specialist, this position is fantastic," Lt. Yergin said, as my mouth dropped open. He called the rest of the unit over to show them the position.

"Look at this, people. It's bounded by trees to within three feet of the hole for concealment. The overhanging cliff and drop off hide it quite well and a bulldozer scrape is close enough for access. It's far enough away from the perimeter to satisfy any field sanitation problems. Yes, specialist, it would make the perfect field latrine!"

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Moscow's Man in

The many documented cases of Cuban involvement in revolutionary movements throughout the southern hemisphere are the visible signs along the trail of a vast, sophisticated and largely covert subversion machine.

By Brett F. Woods

The reports are familiar. We have heard them before: brief vignettes of Cuban intervention throughout the world. Unfortunately, there is considerably more to the story. In spite of the secrecy, a pattern has developed—a network of violence. In a perpetual effort to promote leftist revolution, Fidel Castro continues to undermine existing governments. Cuban methods are clandestine. Their success rate is excellent. Their future is promising. It is not a new approach. It is a Cuban tradition; for example:

- Cuban jets sunk a boat in Bahamian waters.
- Palestinian terrorists train in Cuba.
- Cuba supports a Costa Rican arms network.
- A Cuban runs Nicaragua's secret police.

International incidents? Perhaps. Matters of national security? Probably not. Adventurism? At a minimum, yes. It is actually more than a few specific events which cause concern, however, for these are merely the tip of the iceberg. In the shadowy world of covert warfare, Cuba has emerged the victor; not necessarily a clear winner at times, but a master all the same. It is no accident; it is a scheme which allows Castro to meddle in affairs thousands of miles from Havana. It works for him.

Intellectually, Castro follows a curious philosophy. He fails to differentiate between democracies and dictatorships, and his attempts at insurgency occur regardless of any formal diplomatic relations between Cuba and the target regime. Any country not sharing Cuba's ideological base is considered a target and each

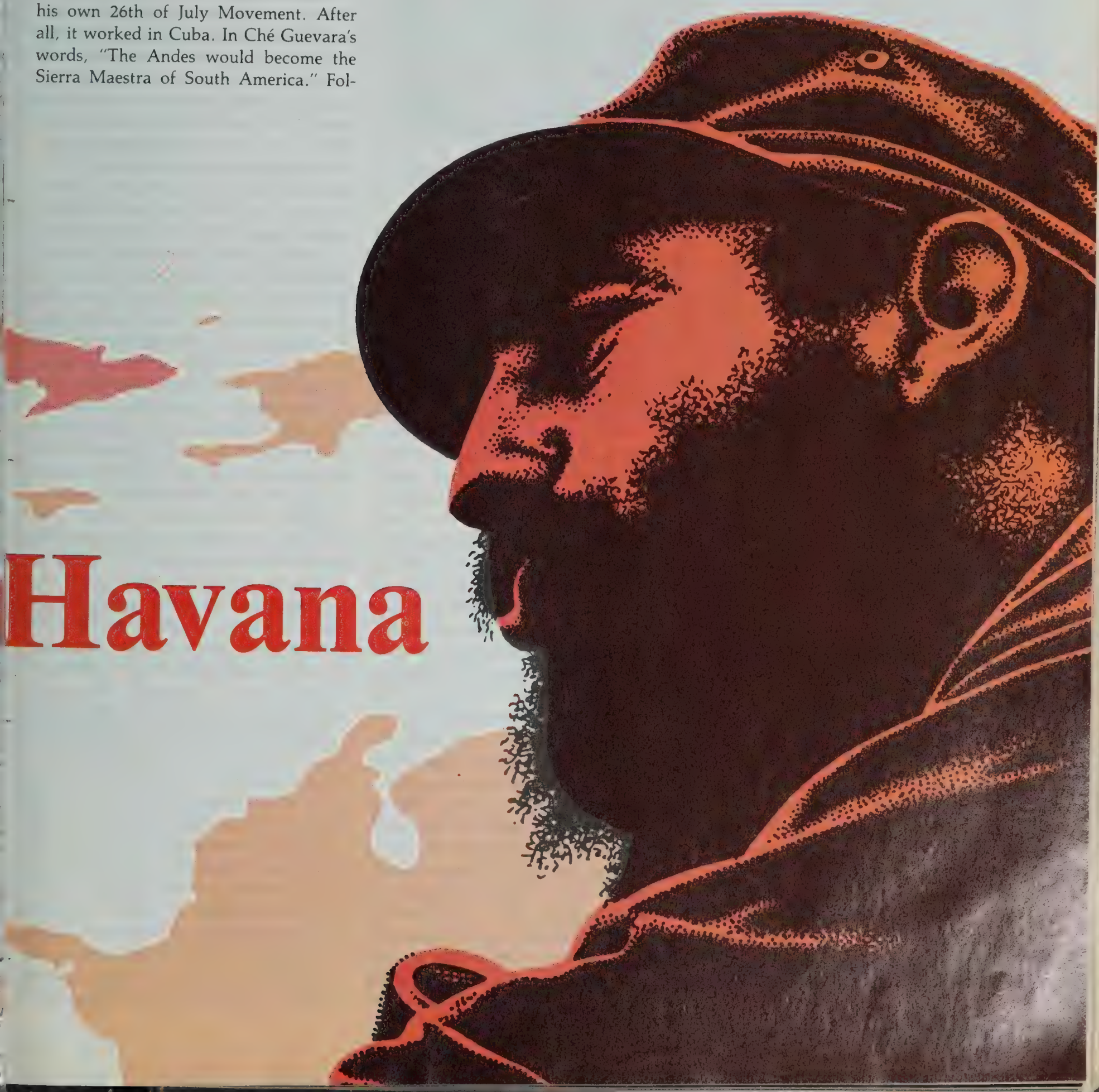
is vulnerable to revolutionary violence; for example:

- In El Salvador, Cuba's key role in arming Salvadoran guerrillas was exposed and Castro admitted supplying the weapons.
- In Colombia, Cuba was discovered to have trained guerrillas attempting to form a "people's army."
- In Puerto Rico, Cuban-trained terrorists firebombed nine Air National Guard jets, worth $45 million, at Isla Verde Air Base near San Juan.

When he first came to power, Castro held a simple theory of how to spread revolution: to reproduce elsewhere the rural-based guerrilla warfare success of his own 26th of July Movement. After all, it worked in Cuba. In Ché Guevara's words, "The Andes would become the Sierra Maestra of South America." Following this line of thought, Castro believed a continental Marxist revolution could be achieved by establishing *focos* or focal points in several countries. Operating in rural areas, small bands of guerrillas could initiate struggles which would spread through the area. It was more than theory, he practiced what he preached.

In 1959, he aided armed expeditions against Panama, Haiti and the Dominican Republic. During the 1960s, Guatemala, Colombia, Venezuela and Bolivia all faced serious Cuban-backed attempts to develop guerrilla *focos*. But these attempts proved unsuccessful and Castro looked to a new continent. Large, violent and struggling, Africa in the 1970s was ripe for insurgency.

In Angola, 20,000 Cuban troops, supported by Soviet logistics, assured the supremacy of the Popular Movement for the Liberation of Angola which, oddly enough, happened to possess the strongest ties to Moscow of the three groups competing for power after Portugal's withdrawal. In Ethiopia, the integration of Soviet and Cuban operations was even more complete with the Soviet Union



Havana

providing overall support, command and control for the 13–15,000 Cuban troops fighting against Somali forces.

The success of the African escapades provided clear evidence of Cuba's military value to the Soviet Union. Castro was a windfall. In areas of the Third World where the Soviet Union was under constraints not binding on Cuba, Havana could portray its actions as an outgrowth of its own foreign policy of "assisting national liberation movements."

At the same time, the Soviets could merely shrug their shoulders in helplessness and claim they had no direct control over Cuban policy. At least it looked good on paper and made excellent diplomatic rhetoric. Cleverly, the Kremlin thus ignored any accusations as to their direct participation in Africa.

There was a price, however. Cuba's extensive and costly overseas activities would have been impossible without generous Soviet aid. Soviet subsidies to the Cuban economy have climbed to more than $3 billion annually or about one fourth of Cuba's gross national product. A case in point: in December 1979, a time when Soviet oil deliveries to Eastern Europe were being cut back, Castro announced that Moscow had guaranteed Cuba's oil needs through 1985 at a price roughly one third that of the world market. Astute Soviet commodity brokers also pay up to four and five times the world market price for Cuban sugar. The money keeps Havana in line.

Castro is anything but a novice at the game. He knows the Soviet "puppet" routine by heart. At the 1980 Cuban Communist Party Congress, he explicitly endorsed the Soviet intervention in Afghanistan and defended Moscow's "right" to interfere in Polish affairs. Of course he also reiterated Cuban commitment to global "liberation" struggles. Was this rhetoric? Not in the least.

Due to the Cuban relationship with the Soviet Union, Castro's continued involvement in Latin American political unrest injects East–West dimensions into what is essentially a local conflict.

In August 1981, for example, a senior Soviet Communist Party functionary traveled to Panama for discussions on Central American strategy with Cuban officials



Photo: UPI

Cuban President and Communist Party leader Fidel Castro.

and leaders of Latin American communist parties. As a result of these discussions, the Soviet Union unleashed its extensive propaganda network to selectively discredit governments and build support for armed opposition groups.

Allowing Havana to take the lead enables the Soviets to maintain a low profile and cultivate state-to-state relations or economic ties with major Latin countries such as Brazil and Argentina. Castro understands the subtleties and, as a measure of deference, is generally cautious not to undercut the Soviets where Moscow has established valued relationships.

In Peru, for example, Cuban policy usually calls for exercising restraint to avoid prejudicing the status of some 300 Soviet officials there or jeopardizing Moscow's arms supply arrangement. Accordingly, the symbiotic nature of a Moscow–Havana pact evolves from theory into fact and the network expands.

To maintain control of their activities, most of Cuba's efforts are planned and coordinated by the America Department of the Cuban Communist Party. Emerging in 1974, the America Department brings together the expertise of the Cuban military and the General Directorate of Intelligence (DGI) in a far-flung operation which includes secret training camps, propaganda support and sophisticated covert transportation networks.

Agents of the America Department are present in every Cuban diplomatic mission in Latin America and the Carribean. In at least five recent instances, an agent was either the actual ambassador or the *chargé d'affaires*.

No, Castro has not forgotten the United States. According to recent congressional testimony, Ramon Sanchez Parodi, a head of the Cuban interests section in Washington, D.C., also doubled as the head of the DGI in the Washington area: "Yet he has been a dedicated communist since his youth and knows how to and when to get tough. His varied talents have gotten him invitations to capital cocktail parties and even one to President Reagan's inaugural."

America Department officials frequently serve as employees of Cuba's official press agency, *Prensa Latina;* of Cubana Airlines; of the Cuban Institute of Friendship with People; and of other, apparently benign, organizations. In situations where too great an identification with Cuba proves counterproductive, Castro's intelligence agents work through front groups such as the Continental Organization of Latin American Students, which usually have non-Cuban leadership.

Cuban military intelligence personnel participate in an elaborate training program conducted by Cuban, Soviet, East German and Czechoslovakian instructors. In addition to learning the language and customs of the area to which they are to be assigned, students are trained for typical clandestine warfare operations. To disguise their true identities, agents are also instructed in civilian job skills such as automotive mechanics and heavy equipment operation. Remember Grenada?

Others receive training as well. Witnesses and former trainees have described several Cuban camps dedicated specifically to military training for foreigners. One is located near Guanabacoa, just east of Havana; another in Pinar del Río. Together, these camps can accommodate several hundred students at the same time. Groups from El Salvador, Nicaragua, Guatemala, Costa Rica, Honduras, Colombia, Uruguay, Chile, plus a host of other countries have been trained in these facilities during the last few years.

But Latin Americans are not the only trainees. Abu Khalaf, a leader of the terrorist Al Fatah's military branch, confirmed that Palestinian agents have received training in Cuba since the 1960s. The Palestinians, with Cuban assistance, have reciprocated by training various Latin groups in the Middle East.

In addition to military training, Cuba also has a broad curriculum for political

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BRETT F. WOODS served in the U.S. Army Special Forces in Vietnam and is a former Secret Service special agent. He is currently a free-lance writer.

training of selected foreign students, and each year Havana offers hundreds of scholarships to targeted individuals.

For example, the Cuban press has reported that 69 foreign students completed advanced studies at the Nico Lopez school (Cuba's highest educational institution), and termed their attendance "a beautiful example of proletarian internationalism." The students arrived from Angola, South Yemen, Nicaragua and a number of other countries which are currently areas of some political unrest. Perhaps it is just coincidence that the courses taken included "political training" for journalists and propagandists, as well as selected studies in economics and ideology.

Children are another asset in the Cuban network. Sports competitions, youth and cultural festivals, and special scholarships to Cuba provide channels for identifying potential agents for intelligence and propaganda operations. The figures are startling; in 1980 alone some 11,000 non-Cuban secondary students were enrolled in 15 schools on Cuba's Isle of Youth.

In addition, close to 300 more advanced students from the Caribbean alone were reported to be studying technical and academic subjects. The study of Marxist-Leninist doctrine is compulsory in many courses; military affairs is mandatory in others.

The evidence is clear—the infrastructure for Cuba's revolutionary agitation in Latin America is a broad, yet carefully coordinated mechanism. The Cuban Communist Party, through the America Department, provides cohesion and direction to a complex network of intelligence officers, elements of the Cuban foreign ministry, front groups, commercial and educational institutions. The purpose is also clear and designed to support one single objective: a systematic, long-range campaign to destabilize governments. It is a Cuban diplomatic custom.

How does Castro actually take control of a country? His approach is straightforward and relatively simple. A case in point is Nicaragua.

Have Muscle, Will Travel

Cuba, with armed forces totaling about 153,000, has nearly 40,000 troops stationed in various foreign countries, according to the authoritative 1983–84 "Military Balance," published by the International Institute for Strategic Studies (IISS).

Angola has 25,000 troops; the Congo, 750; Ethiopia, 11,000; Mozambique, 750; other African nations, 500; South Yemen, 300; and Nicaragua, 1,000. Other IISS figures:

The Caribbean nation has a population of ten million, and some 94,500 conscripts in its armed forces who serve a minimum of three years. The army has 125,000 troops, including ready reservists and 75,000 conscripts, organized into two armies with four corps headquarters; one armored division; three mechanized divisions; six infantry divisions; one airborne assault brigade; special forces numbering 3,500; and artillery brigades.

Tanks include some 60 T62s; 250 T54/55s; 350 T34s; and an undetermined number of PT76 light tanks. Other vehicles: BRDM1/2 armored cars; some 100 BMP MICVs; 400 BTR40/60/152 armored personnel carriers. Artillery: 1,200 guns, howitzers, including 76-mm, 85-mm, 100 SU100 self-propelled, 122-mm, 130-mm, 152-mm, BM14 140-mm and BM24 240-mm multiple rocket launchers; 50 FROG-4 surface-to-surface missiles; M43 120-mm mortars. Antitank weapons: 57-mm guns; 57-mm recoilless launchers; Sagger, Snapper guided weapons. Air defense: 1,500 antiaircraft guns, including ZU23, 37-mm, 57-mm, 85-mm, 100-mm towed; ZSU23-4 23-mm, 30-mm M53 (twin)/ BTR60P, ZSU57 57-mm self-propelled; SA7 surface to air.

The Cuban navy has 12,000 personnel and consists of three submarines; one *Koni* class frigate; 11 large patrol craft; 26 fast-attack craft (missile); 26 fast-attack craft (torpedo); 22 fast-attack craft (patrol); 12 minesweepers; and nine large landing craft.

The Cuban air force has 16,000 personnel and includes air-defense forces. With a total of 290 combat aircraft, it is organized into four ground support fighter squadrons; 16 interceptor squadrons; eight helicopter squadrons; and four transport squadrons. Aircraft include 36 MiG-23BN Flogger Fs; 15 MiG-17s; 30 MiG-21Fs; 15 MiG-23 Flogger Es; 60 Mi-4, 40 Mi-8; and 18 Mi-24 Hind D helicopters.

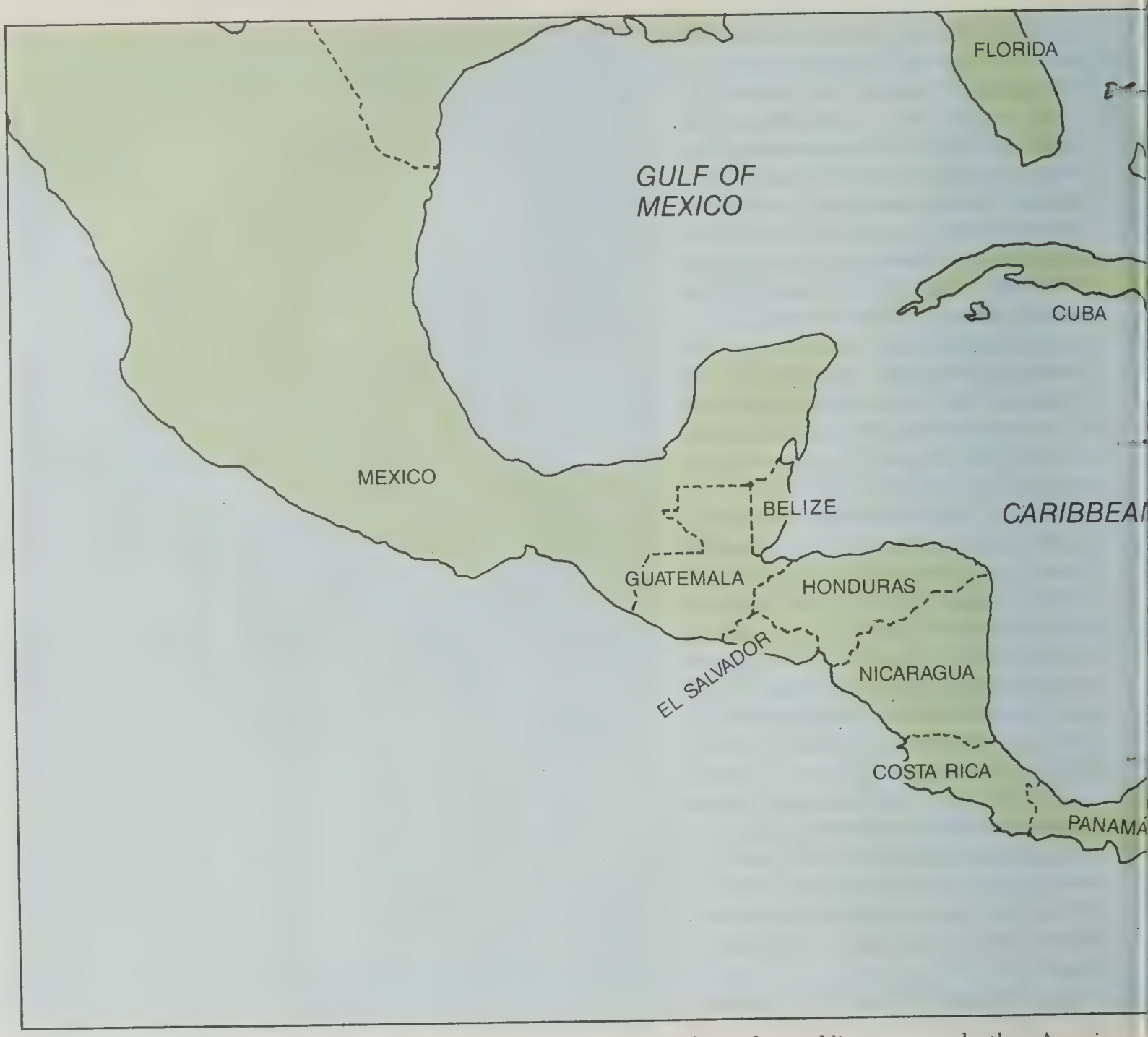
There are 190,000 in the ready reserve who serve 45 days a year to fill out regular and 15 reserve infantry divisions.

In July 1979, internal and external factors converged to bring about the triumph of anti-Somoza insurgents and the subsequent domination of the new Nicaraguan government by the Cuban-trained leadership of the Sandinista National Liberation Front (FSLN). These events provided a key test for Castro's strategy to promote armed, pro-Cuban movements in the hemisphere. Overtly, it could appear as just another, albeit violent, transition of leadership. Behind the scenes, however, it was a different story entirely.

Opposition to President Anastasio Somoza's authoritarian rule during the late 1970s was widespread, and the 1978 killing of Pedro Joaquin Chamorro, a Somoza critic and publisher of Nicaragua's most popular newspaper, *La Prensa*, had converted many Nicaraguans to the resistance movement. The FSLN became the opposition's core and their assurances were accepted quickly by both newly allied political moderates as well as private businessmen. Internationally, sympathy for the opposition came from Venezuela, Panama and Costa Rica, all of whom provided aid to the insurgents. It was the perfect disguise for Cuba and a unique opportunity to exploit an unstable situation. Castro moved swiftly.

In early 1978, a high-ranking America Department official, Armando Ulises Estrada, was secretly dispatched to Nicaragua. His mission was to unify the three major factions of the FSLN and to facilitate the revolution. By conditioning Cuban support on revolutionary unity, he was able to hammer out an agreement between the various anti-Somoza political factions. His success was announced during July 1978, at the XI World Youth Festival in Havana, where Cuban leaders stated that unification of the Nicaraguan factions had been achieved and urged other Latin American radicals to demonstrate solidarity with the Sandinistas by staging operations in their own countries.

After unification, Castro moved to fill Cuba's side of the agreement and Armando Estrada remained busy, concentrating on building a supply network for channeling arms and other supplies to Sandinista guerrillas. Elsewhere, international opposition to the Somoza government intensified and continued to provide a convenient facade for Armando Estrada's efforts. In preparation for the first FSLN offensive in 1978, arms were flown from Cuba to Panama, transferred to Costa Rica on smaller planes and eventually



supplied to anti-Somoza forces operating out of northern Costa Rica.

To monitor and assist the arms flow, the America Department established a secret operations center in San José, Costa Rica, and intensified the Cuban effort. By the end of 1978, Cuban advisors were assigned to Sandinista bases to train and equip FSLN forces with arms then arriving directly from Cuba. Of course, FSLN guerrillas trained in Cuba continued to travel back to Nicaragua via Panama.

In early 1979, Cuba helped organize, arm and transport an "internationalist brigade" to fight alongside the FSLN guerrillas. Members were drawn from several Central and South American extremist groups experienced in terrorist activities. Cuban military specialists also took to the field inside Nicaraguan borders.

With victory in sight, factionalism again threatened Sandinista unity and Castro's plans. But he was not about to allow Nicaragua to slip away. Personally meeting with FSLN leaders, he persuaded the guerrillas to work together for the greater glory of the revolution. Successful, a renewed unity pact was signed and the rest was quick and violent.

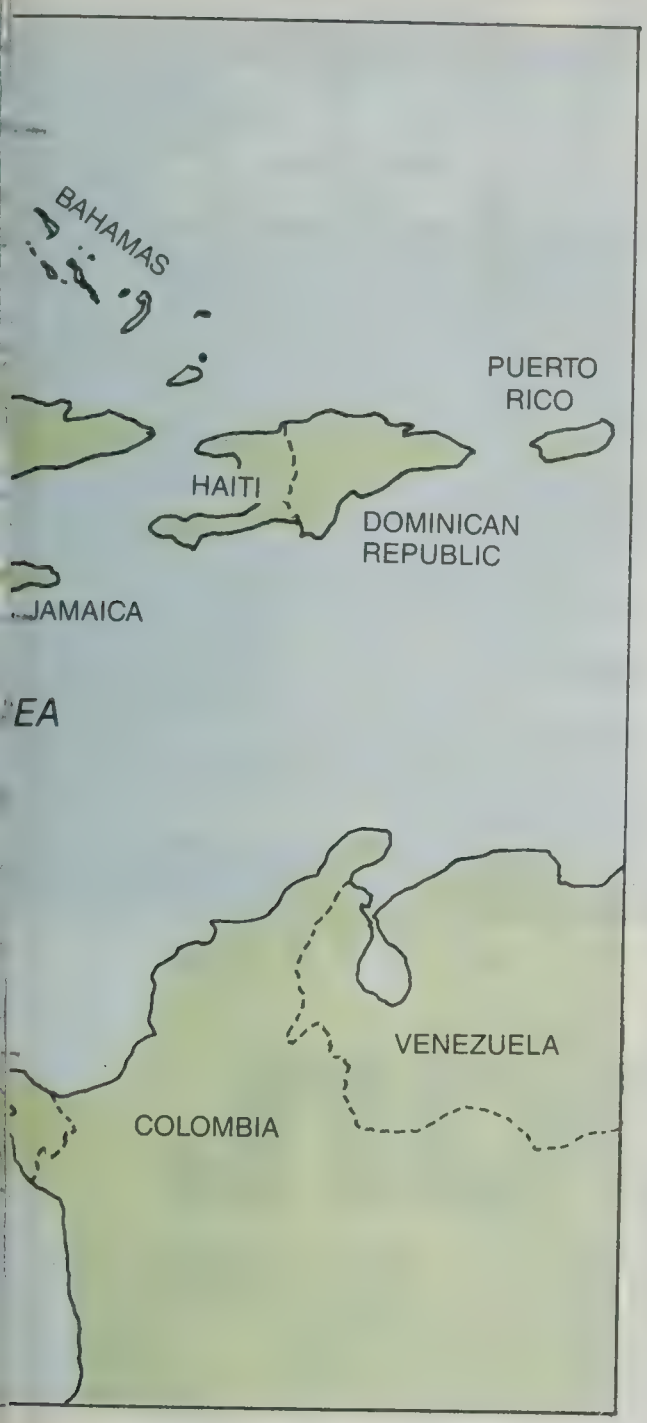
When the insurgents' final offensive was launched in mid-1979, Cuban military advisors from the Department of Special Operations, an elite military unit, fought alongside FSLN columns and maintained direct radio communications with Havana. The Cuban advisors wounded in battle were evacuated directly to Cuba via Panama. The die was cast—Castro had won Nicaragua.

After the victory, Julian Lopez Diaz, the chief of the America Department's secret operations center in Costa Rica, became the Cuban ambassador to Nicaragua. One of his assistants, a Cuban named Andres Barahona, was redocumented as a Nicaraguan citizen and became a top official in the Nicaraguan intelligence service. Clearly, Castro was taking no chances.

Since the revolution, Cuba has continued to use Nicaraguan territory as a base of support for other guerrillas active in neighboring countries. The Cuban ambassador to Nicaragua and other America Department officials frequently meet with Central American guerrillas in Managua to advise them on tactics and strategy.

Training continues. The FSLN has cooperated in a joint Cuban–Palestinian effort to provide military instruction at locations in the Middle East. Numerous Latin American extremists, including the Sandinistas, have thus been trained by the Palestinian Liberation Organization, which maintains an embassy in Nicaragua.

Cuba has provided a substantial amount of military, technical and political assistance to Nicaragua. Some 5,000 Cuban advisors, teachers and medical personnel work at all levels of the Nicaraguan government. In addition, millions of dollars worth of military equipment is constantly forwarded from the Soviet Union. Tanks, helicopters, heavy artillery, surface-to-air missiles, hundreds of military transport vehicles, as well as tons of small arms and ammunition are included in regular deliveries from Moscow. But this, apparently, is still not enough. Daniel Ortega,



a Sandinista leader, has traveled to the Soviet Union in an attempt to obtain advanced Soviet MiG fighters. If he is successful, Nicaragua will join Cuba as the second Latin American country to possess an offensive, first-strike air capability for potential communist expansion.

But Nicaragua is only one story. Briefly, there are others:

■ In Jamaica, a Cuban front organization, Moonex International (registered in Liechtenstein with subsidiaries in Panama and Jamaica), was discovered to be the recipient of an illegal arms shipment from Miami. Jamaican authorities apprehended the local Moonex manager, who was being accompanied by none other than Armando Estrada, as the manager was attempting to leave the island by private plane.

■ In El Salvador, Cuban agent Fernando Carrasco Illanes (a Chilean national residing in Costa Rica) continued to supply arms to Salvadoran insurgents after the Cuban-backed insurrection in Nicaragua.

■ In Costa Rica, arms left over from the Nicaraguan campaign were diverted to Salvadoran terrorists through the Cuban consulate in San José. The major coordinator was America Department agent Fernando Pascual Comas Perezé who was assigned to Cost Rica under the cover title of Cuban vice-counsel.

■ In September 1980, Cuba laundered $500,000 in Iraqi funds which were directed to Salvadoran insurgents.

■ In Guatemala, a large number of the 2,000 or more active leftist guerrillas have been trained by Cuba. In addition, Cuba has supplied the insurgents with M16 rifles which have been traced to U.S. stocks captured in Vietnam.

■ In Honduras, revolutionaries including Nicaraguans and a Uruguayan national were captured in a guerrilla safehouse. In addition to a substantial arsenal of explosives and automatic weapons, documents seized indicated recent attendance in Cuban training schools.

■ In the Dominican Republic, Cuban intelligence officers, like Ormar Cordoba of the America Department, make periodic visits to the island to evaluate leftist programs. Under Cuban direction, over 700 students attended training programs in Cuba, the Soviet Union, Bulgaria, East Germany, Hungary and Rumania.

Castro's various campaigns of violence have, of course, had a negative effect on Cuba's relationships with some of its neighbors. Although close ties have been nurtured, as in the case of Nicaragua, Cuba finds itself increasingly isolated in the hemisphere.

The Caribbean community was shocked when Cuban MiG–21s sank the Bahamian patrol boat *Flamingo* in an unprovoked May 1980, attack inside Bahamian coastal waters. Four seamen were subsequently machine-gunned while trying to save themselves as their vessel sank. After a request from the Bahamian government, the U.S. Coast Guard arrived on the scene to search for survivors. They, too, were harassed by the Cuban jets and the bodies of the sailors were never recovered.

Peru nearly broke off relations with Cuba and removed its ambassador from Havana when the Cuban government encouraged Cubans eager to leave the island to occupy the Peruvian embassy. After more than 10,000 Cubans crowded into the Peruvian compound, Castro thwarted efforts by concerned governments to develop an orderly departure program. He had other ideas.

Castro opened the port of Mariel to emigration, expelling criminals, some freedom seekers, the mentally ill and an undetermined number of America Department agents operating under various covers.

Based on Castro's past activities, it is entirely reasonable to assume that out of the 125,000 people who left the island, at least a few were intelligence agents. The question is, where are they now?

Cuban sponsorship of global insurrection is perhaps the most comprehensive in recent history. The incidents presented here are merely those closest to the United States and, rest assured, there is considerably more to each story—more violence and more secret operations.

Recently, the U.S. Defense Intelligence Agency listed other countries where Cuban personnel are active: Benin, Burundi, Cape Verde, the Congo, Guinea-Bissau, Guinea, Mali, the Seychelles, Colombia, Uruguay, Argentina, Mozambique, Chile, Mexico, São Tomé, Tanzania, Czechoslovakia, East Germany, Algeria, Iraq, Libya, Laos, Kampuchea and, of course, Vietnam.

Based on the scope of their activities, the defeat in Grenada must seem but a minor irritation to Havana and, in spite of the loss, their future remains promising. After 30 years in the business, Fidel Castro has emerged the master of revolution. It may be terrorism or, perhaps, diplomacy. In either case, one thing is evident: Cuban policy is insurrection by another name.

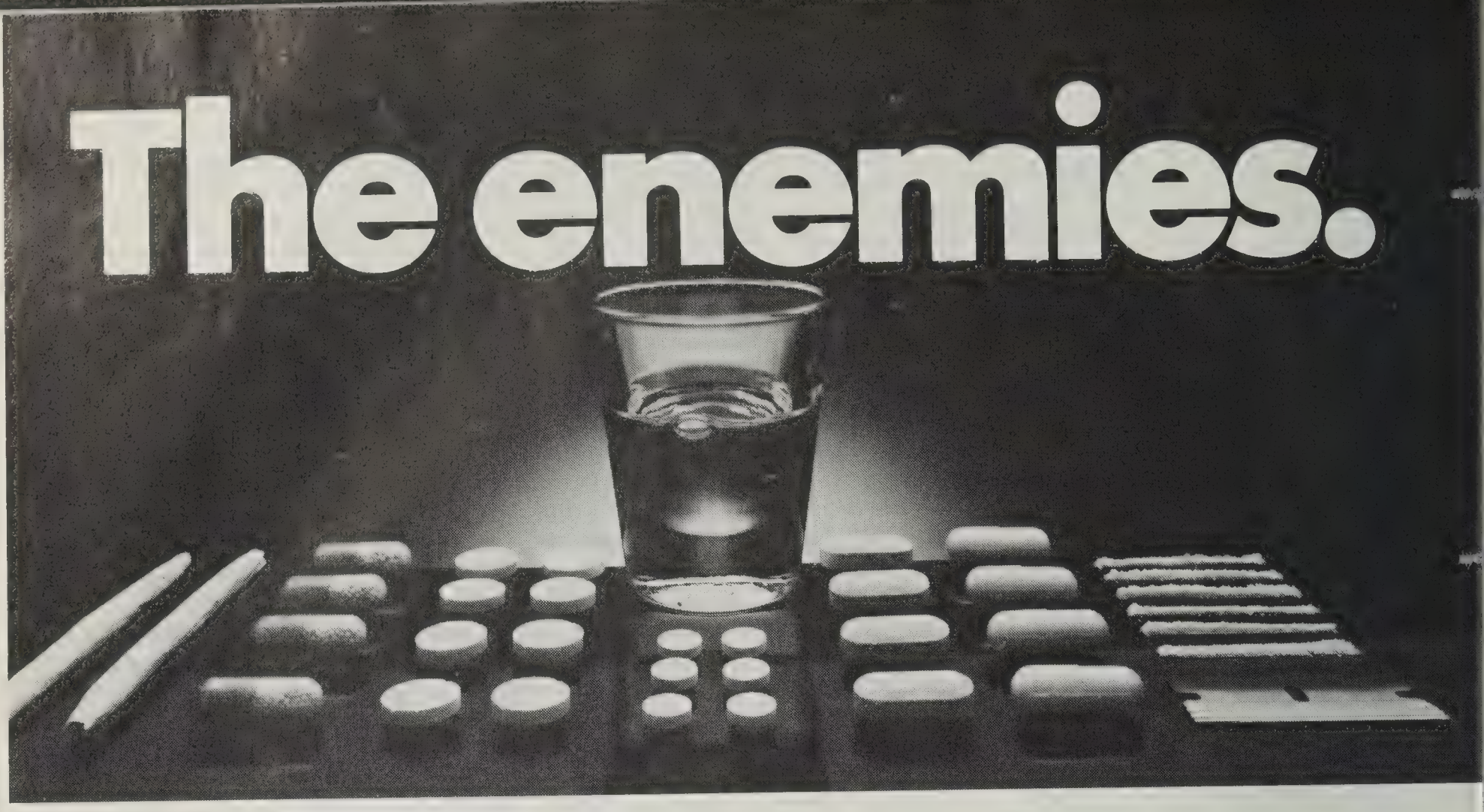
Proof Enough

When I was a student at the U.S. Army War College, some elective courses were taught by faculty members from nearby institutions. I elected a writing course for which a professor from the University of Pennsylvania had prepared this statement of the objective: "To help officers write simple English."

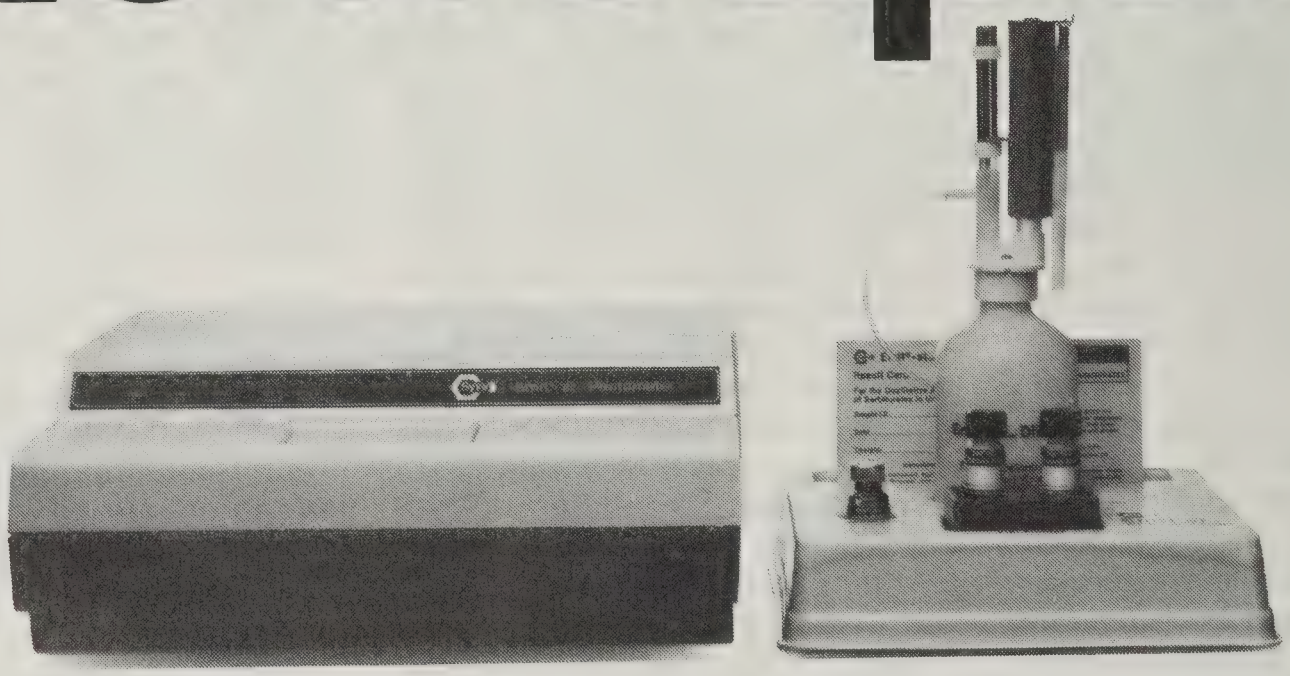
Undeterred by the professor's clear statement of the objective, the officer assigned from the War College faculty to monitor the course changed the objective to read: "To prepare officers for high-level command and staff assignments by cultivating the skill of writing." To some of us, that provided proof enough that Army officers need such courses.

COL. ROBERT E. TOZIER

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Once considered an art, military camouflage has moved far into the realm of science as the Army devises ways to fool not only the human eye, but to hide men, installations and equipment from radar, infrared and other exotic sensors.

NEW DIRECTIONS IN CAMOUFLAGE



By Henry R. Atkinson

High-technology, state-of-the-art, scientific breakthrough—these are terms not usually associated with camouflage. After all, camouflage is as old as the human race. The use of concealment and disguise is documented as early as 10,000 B.C.

The high-technology world of sensor and seeker systems has been expanding at a rapid rate making the early, simple methods ineffective. To find and target soldiers, weapons, command posts and other critical assets, hostile forces have developed a vast array of sensors and seekers that operate across the electromagnetic spectrum.

The threat U.S. forces now face is no longer simply a commander or scout with binoculars searching the landscape or an observer in an aircraft; but high-technology, multispectral sensor systems that "see" in the dark, through clouds and through old-fashioned camouflage nets.

Some sensor systems detect differences in temperature as minute as variations occurring in the human body and can see military equipment such as tanks, trucks, generators and artillery for miles by their thermal signatures.

Other sensors detect movement of personnel and equipment, or receive radar reflections from equipment at long distances.

Sophisticated "smart" weapons actually seek the known target on their own, programmed to hit the heat source or some other target signature. Various sensors may be carried on land vehicles, fixed- or rotary-wing observation aircraft, high-performance aircraft or on space-borne platforms.

For camouflage systems to keep pace with these sophisticated threats they must be able to do more than prevent an observer from seeing the target visually. Multispectral countersurveillance materials and techniques operating across the hostile's sensor spectrum are required to prevent detection and subsequent destruction.

The Belvoir Research and Development (R&D) Center is the Army's lead laboratory for camouflage. The objective is to counter hostile, advanced, sophisticated multispectral sensors through passive countersurveillance materials and techniques to achieve cost-effective camouflage. There are five major elements in the program structure: Army-wide camouflage, signature suppression, international activities,

paints and coatings, and decoys/simulators.

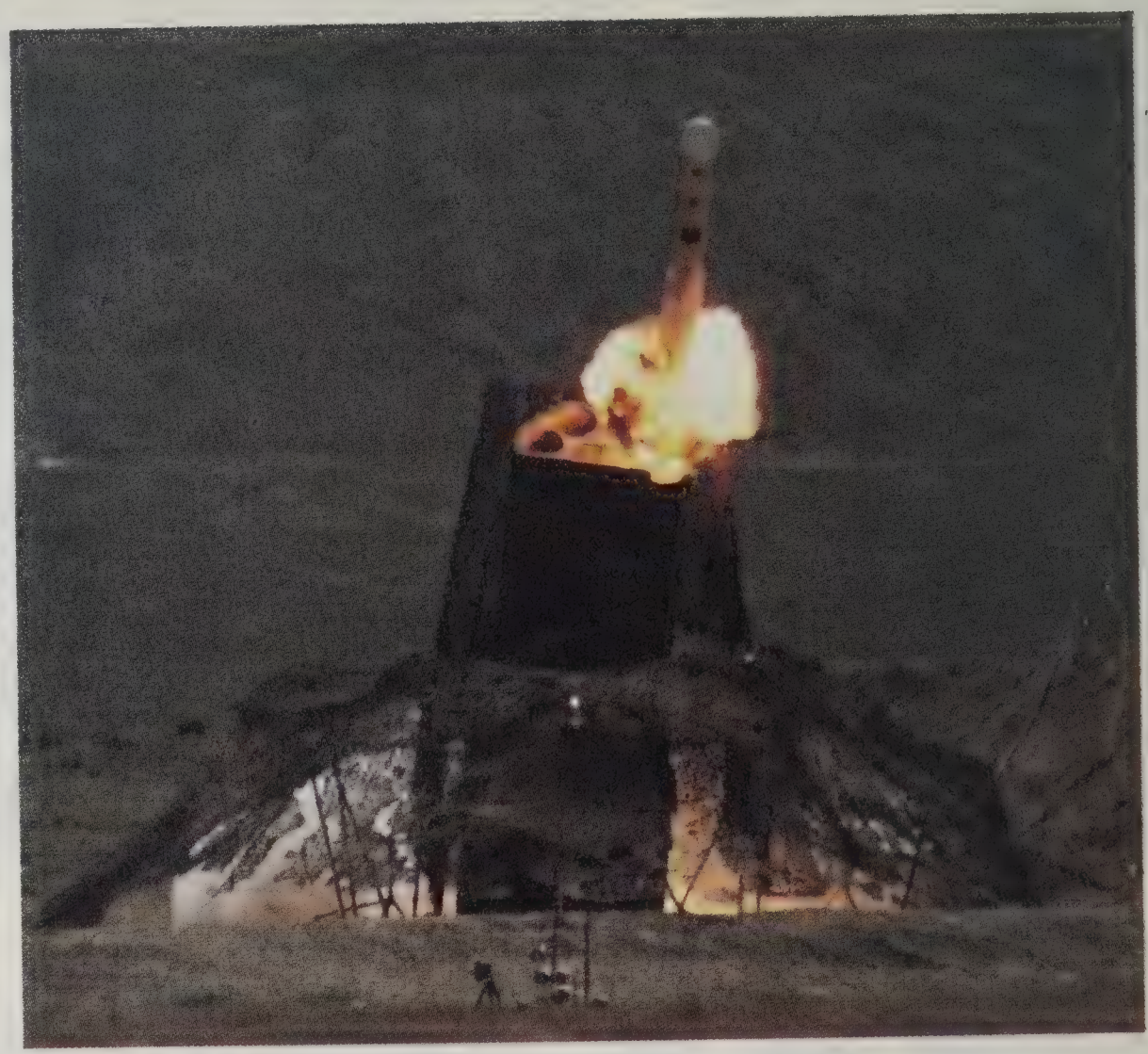
Camouflage is used by every soldier in the Army. The battle-dress uniform (BDU) is a camouflage outfit developed after research and testing to make the soldier less detectable than he was in the old monotone uniform. The pattern and colors were developed by the camouflage laboratory; the uniform was designed by Natick Research and Development Center.

Another camouflage system that has Army-wide application is the lightweight camouflage screening system. Commonly called camouflage net, it has radar-scattering capability that helps hide equipment from hostile radars and has near-infrared (IR) reflectance which matches background vegetation and blends the net into its surroundings when viewed by camouflage detection film.

The net provides arctic, desert and woodland visual camouflage through three distinctly different color combinations; each net is reversible for greater color coverage. Because of its standardized and flexible shape and because it can be quickly removed, the net can be used over a wide variety of equipment or installations. Work is continuing to expand the net's capability to meet emerging threats by increasing its capacity to defeat more advanced radars and by building in thermal suppression features. A very lightweight camouflage screening system is under study which may use a paper throwaway net for some limited applications.

For major systems such as the ground-launched cruise missile, special camouflage is designed to be an integral part of the weapons system. This built-in camouflage can be erected quickly, allows the missile to fire while camouflage is still deployed and may be retrieved within minutes and loaded on a ground vehicle. Prototype camouflage kits have been deployed for the M109 self-propelled howitzer and a custom camouflage system has been developed for other equipment.

The Belvoir R&D Center advises Army Materiel Command equipment developers on a range of issues from reducing radar cross section during design to the use of robots on the assembly line for painting camouflage patterns. Camouflage assistance is also given to the soldier in the field, whether it be a net problem, a question on painting or a special camouflage application. A hot line is operated to answer questions on camouflage and provide assistance.



Special quick-deploying netting has been developed for the Air Force's BGM–109G ground-launched cruise missile, shown here firing from under camouflage.

Signature suppression (that is, the elimination of thermal or other "signals" emitted by a target) may be achieved by use of a camouflage net in most situations. However, there are some unique signatures and high-signature items that require more treatment. An engine-driven generator set producing electric power is an example of a high-signature item which has an extremely high temperature that produces a strong signature to a thermal sensor.

Camouflage kits and thermal blankets can be added to reduce the radiating signature. However, during a hot, sunny day, the thermal blankets will heat up and could provide a larger thermal image than the engine over which they have been placed. In order to overcome this problem, the use of air entrainment principles and design of equipment components to reduce signature are being considered as practical solutions. The multispectral or specific threat that is faced must be recognized, so reduction of one signature must never exacerbate another.

International programs provide an opportunity for the United States to learn from other countries as well as to cooperate on programs, thus reducing the cost to each participating country. Because of the unique nature of camouflage, there is no civilian industry from which to draw a technology base. By turning to our allies we can benefit from their experience and a much wider industrial base.

In pursuing the international aspects of camouflage, agreements have been established with five countries which allow for the exchange of data, reports and on-site visits. Through joint talks between the Federal Republic of Germany and the United States, a bilateral materiel equipment characteristics document was produced which allows for cooperation in camouflage pattern design.

The bilateral agreement with West Germany involved developing a program to establish the optimum camouflage pattern. Research and field experiments were carried out using photosimulation techniques to determine statistically the optimum camouflage design. Field experiments were conducted using the olive drab,

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HENRY R. ATKINSON, chief of the countersurveillance and deception division of the Combined Arms Support Laboratory, Army Belvoir Research and Development Center at Ft. Belvoir, Va., is the U.S. expert for a bilateral agreement with the Federal Republic of Germany on standardized camouflage.

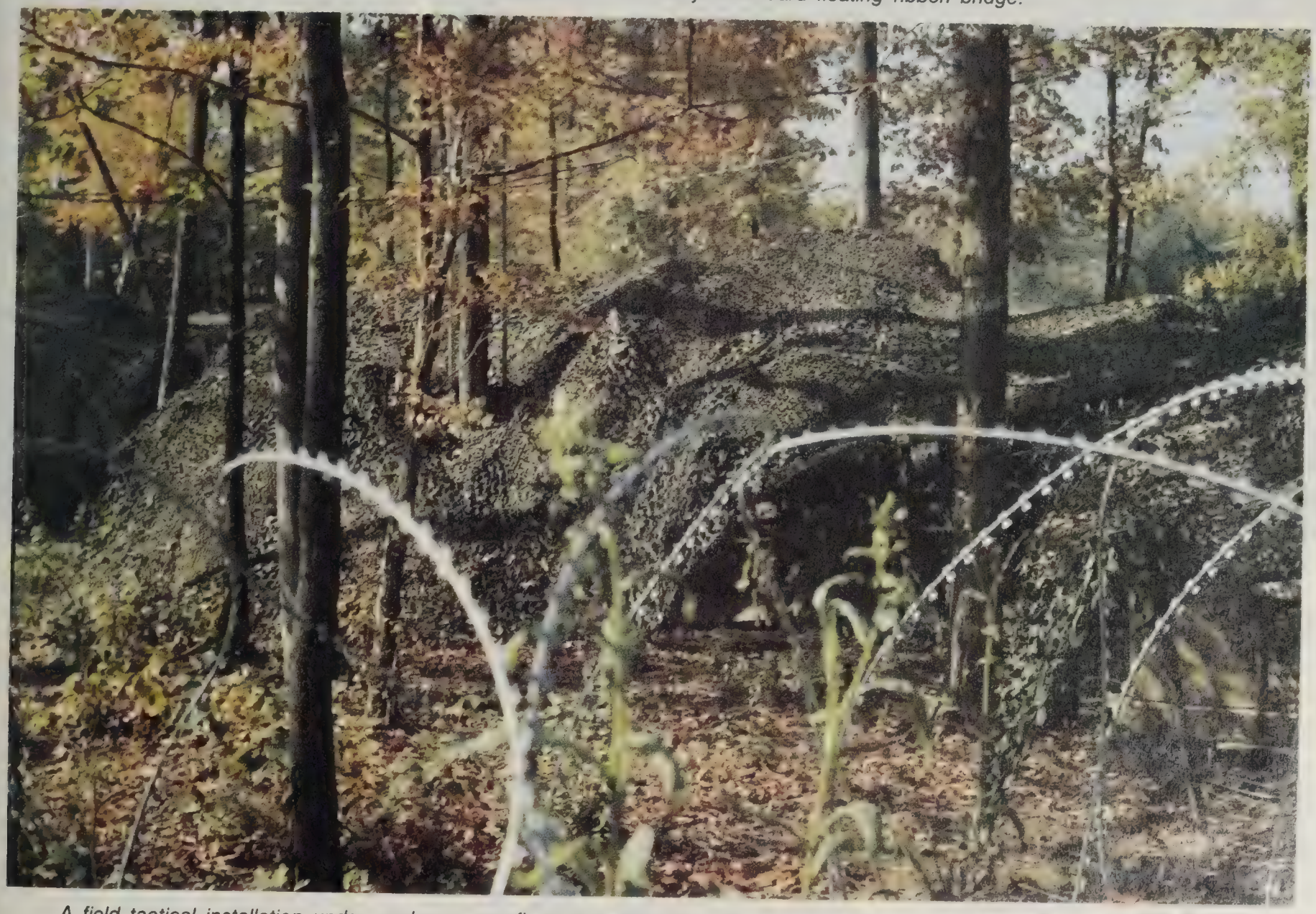
an experimental camouflage pattern, the standard American four-color pattern, and the German three-color pattern. The three-color pattern was the culmination of two years of research into criteria to determine camouflage effectiveness and resulted in a new standard pattern which uses disruptive black bands painted across the vehicle to create the illusion that it has disappeared.

Test results proved the German three-color pattern was superior in terms of the difficulty and probability of detection. It also worked better in winter and summer. The United States agreed with Germany to standardize this pattern with its associated colors, and it is now the U.S.–German standard camouflage pattern.

Patterns for hundreds of pieces of U.S. military equipment are being designed manually, with computer-assisted design soon to come. Pattern painting has started on some new items of equipment just off the production line. The three-color pattern is easier to apply and more effective than the old four-color pattern. In concert with this change, the Army is changing from an alkyd to a chemical-agent-resistant coating.



This string of decoys under test at Ft. Belvoir, Va., is designed to replicate the radar signature of the Army's standard floating ribbon bridge.

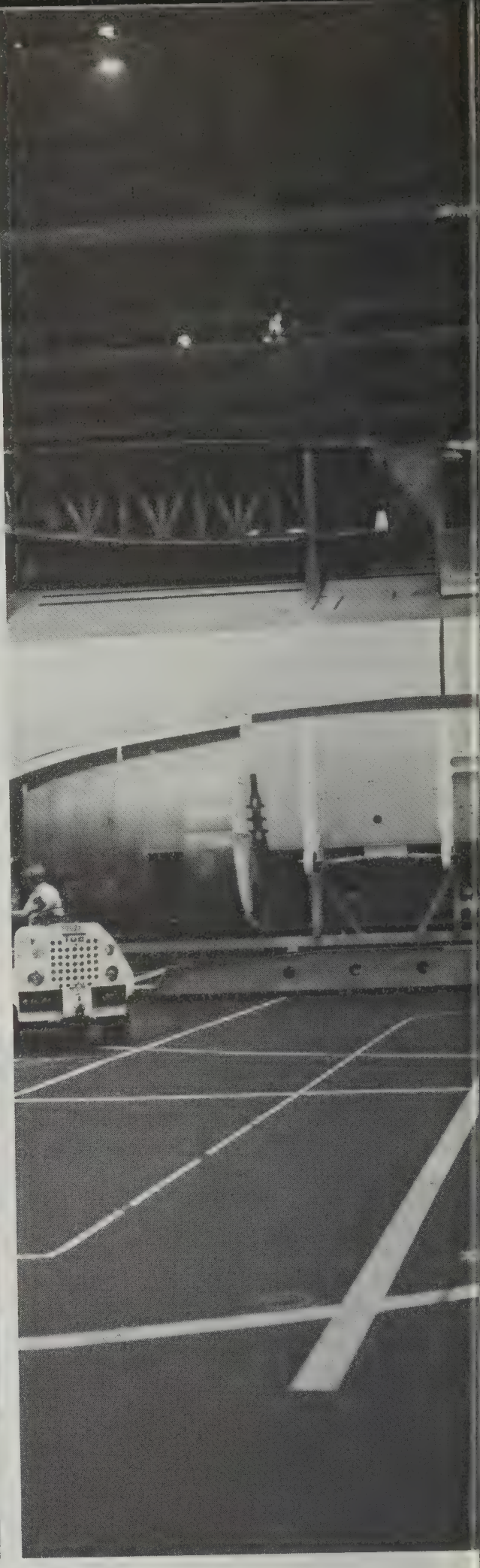


A field tactical installation under modern camouflage screening not only frustrates visual detection but scatters radar signals.

Innovation

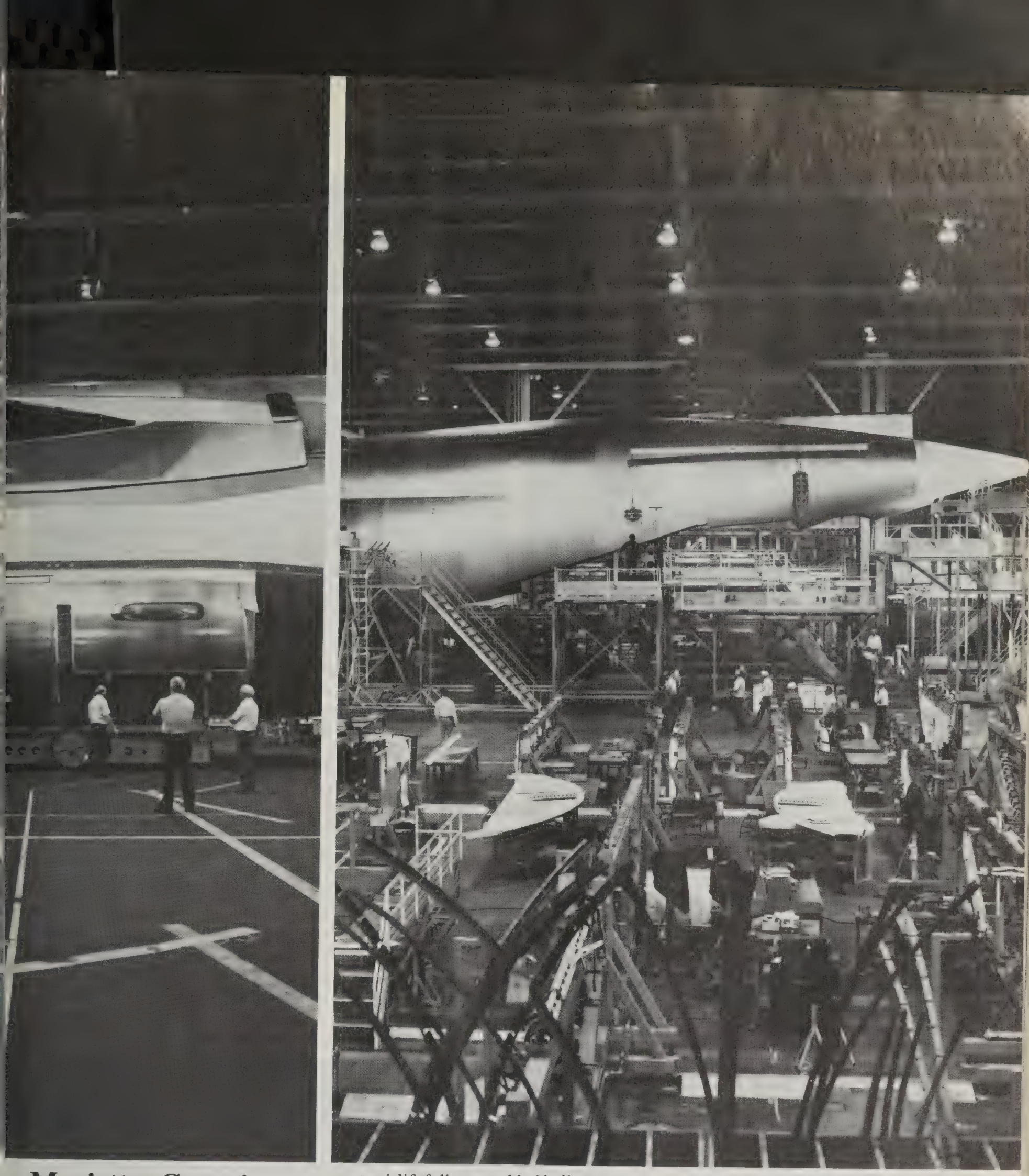
Turn proven hardware into all-new C-5Bs to increase America's airlift strength.





Lockheed-Georgia

Giving shape to imagination.



Marietta, Georgia—January 1985

Major assembly is continuing rapidly on the first of the new USAF C-5Bs. After its first flight this fall, it will join the 77 C-5As already in service with the Military Airlift Command.

The fixed-price program calls for Lockheed-Georgia to produce 50 C-5Bs, making America's outsize cargo capacity 65% greater and dramatically expanding airlift—the backbone of deterrence.

This will increase the nation's ability to airlift fully assembled helicopters, infantry fighting vehicles, self-propelled artillery, M-1 tanks, and all other needed equipment to any part of the world with the speed necessary for effective deployment.

Moreover, the new C-5Bs will significantly enhance operations through such improvements as a simplified automatic flight control system; color weather radar that is lighter and more reliable; a digital air data computer; and a highly advanced navigation/communications system.

The C-5B also will have improved engines with increased reliability. And much of the aircraft will employ new alloys that are stronger and more corrosion-resistant. Other advances enhance its maintainability.

As assembly continues at Marietta, Georgia, the C-5B is meeting or exceeding all program quality requirements—one result of our new, modern machines and production methods.

It is also a testimonial to the skill and energy of the people at Lockheed-Georgia, as well as workers at Lockheed's suppliers in 47 states.

With the C-5B, they are not only building the free world's biggest airlifter, they are building it better.



The erected antenna of the AN/TPQ–37 artillery-locating radar (left) *and the same item camouflaged* (right).

The United States sends a representative to NATO's Special Group of Experts on Concealment, Camouflage and Deception, under the NATO Defense Research Group. This panel-level NATO body exchanges information, has a work program aimed at the common good and periodically plans and executes large camouflage projects and field experiments. The body includes three working groups that carry out projects in the area of targets and backgrounds, modeling and methodology, and camouflage hardware. A common project of the group of experts was the camouflage of a Hawk missile site. Results of that full-scale experiment showed statistically the benefit of camouflage against incoming aircraft.

While research in paints and coatings has produced chemical-resistant coatings in the new camouflage three-color pattern, the focus now is on developing technology to provide for radar-defeating paint, with controlled emissivity to negate thermal sensors. Other research is aimed toward developing a spray-on substance that could enhance the suppression capability of camouflage nets and equipment. Research in coatings focuses on developing a material for application to radar "hot spots."

Researchers have also developed broadband measurement techniques for 5–100 GHz (gigahertz), and allowed calculations of electromagnetic properties. Materials investigated for use in radar-defeating paints include ferrites, ferrous elements and thin fibers.

Development of paints and coatings includes semiconductor pigments which vary emissivity with temperature and polymer and metallic particles which also affect emissivity.

The use of decoys is an integral part of camouflage. To fully achieve the payoff associated with camouflage one needs to direct hostile eyes or sensors to where they will see what the friendly commander wants them to see while concealing the real targets. Decoys can be used to provide fake troop positions or can be left behind to confuse hostile intelligence, which may report that the unit is still in one location long after it has relocated. Decoy technology is refined to the point that observers or sensors may be deceived in the unaided or aided visual, near-infrared, thermal infrared and radar components of the electromagnetic spectrum.

Decoy forms may be as simple as radar reflectors or as complex as high-fidel-



These inflatable decoys simulate a Hawk air-defense missile site, including (left to right) *a generator, launcher and illuminating radar.*



A camouflage laboratory technician at the Belvoir Research and Development Center positions a vehicle model along the facility's radar horizontal arch, which allows a greater range of radar signature measurements.

ity inflatable equipment. Research has focused on both passive and active signatures, such as the flash and noise of guns. Decoys used with camouflage are particularly high payoff items.

For example, a helicopter blend-disguise-decoy kit has a fabric cover to wrap the helicopter, thus disguising it and blending it with the background. The decoy is a cocoon-like structure with a pipe frame. To the observer, both the cocoons look alike—one covering a helicopter and the other an inexpensive decoy.

The Belvoir R&D Center has unique facilities and equipment for developing camouflage and camouflage technology. Radar cross-section reduction studies are done on a 94-GHz macroscope. The radar returns on a tenth scaled model provide a quantitative analysis on the microwave characteristics of a target at X band (9.4 GHz). If the threat of concern is C band, a 20th scale model will yield reflectivity data corresponding to the actual vehicle illuminated at 5 GHz.

The radar returns from the macroscope are shown in real time superimposed on a video image of the target. It provides a diagnostic capability to probe quickly and effectively the critical imagery in order to isolate and quantitatively measure the exact physical and geometric contributors to the radar return which form the inherent, identifying signature of the weapons system. Without this facility, such information could only be obtained in limited amounts from full-scale vehicles in an outdoor environment, which involves positioning large vehicles on turntables, a restricted number of possible surveillance angles, uncontrollable weather conditions, equipment malfunctions and large costs for conducting tests. The in-house facility eliminates all of these disadvantages with a precise indoor modeling range, and complete control is maintained over all test conditions.



A new radar, horizontal arch that operates from 2–40 GHz has been installed which measures the radar-absorbing and -scattering properties of materials that have potential application in camouflage. The arch uses dual-polarized, circular aperture antennas, a locking frequency counter, a sweep source and network analyzer. It is a one-of-a-kind facility that provides radar cross-section reduction measurements on accurately scaled model targets over a 360-degree azimuth rotation and at depression angles from minus-30 to 30 degrees.

The antennas on the horizontal arch are mounted on computer-controlled motorized carts which can be positioned anywhere on the 20-foot diameter arch to allow for bistatic cross-section measurements. The arch is also capable of performing direct radar transmission measurements through cloth materials used for camouflage nets.

To evaluate new radar cross-section reduction concepts, the radar arch system can perform far-field measurements for up to 14-inch square panels coated with the radar-absorbing paint or coating. The radar arch with macroscope provides a complete multipurpose indoor radar test facility across the entire frequency range.

It is hoped that future military equipment will be designed to minimize all signatures of value to hostile sensors. Radar-defeating paint with controlled thermal emissivity will be applied as chemical-agent-resistant coating in a camouflage pattern. High-signature items will have camouflage kits to eliminate unique signatures, and the improved camouflage net will provide the extra protection needed. Decoy equipment and positions will replicate the real to mislead the enemy. Inexpensive, very lightweight throw-away camouflage will augment the system of camouflage.

As Norman R. Augustine, author of *Augustine's Laws*, once stated, the goal is having our enemy say: "We know of not a single instance wherein the enemy has successfully used camouflage against us."

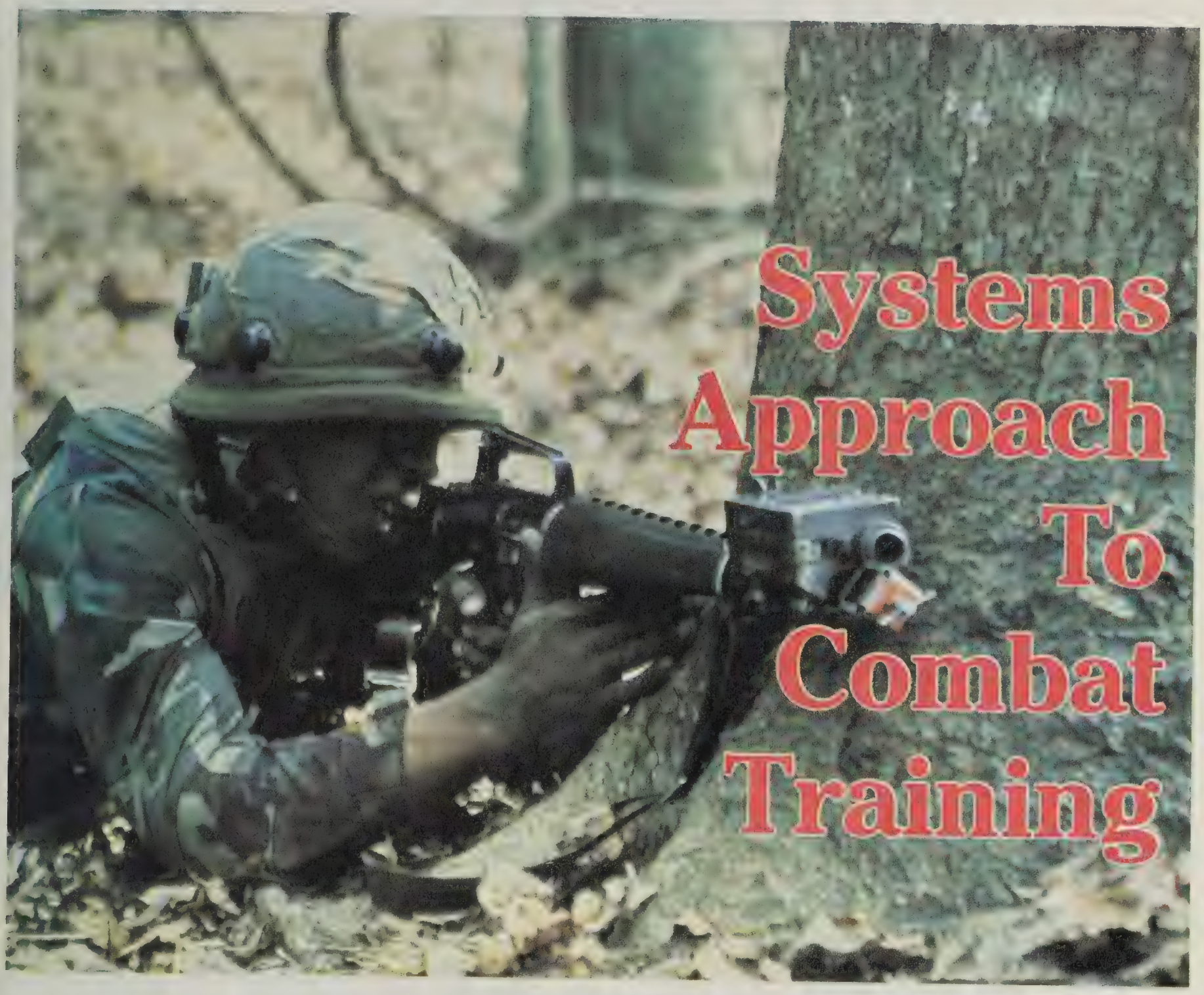


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HARRIS



Systems Approach To Combat Training

By Col. Andrew P. O'Meara Jr.
and
Lt. Col. Raymond C. Hartjen Jr.

The SAT methodology in getting maximum effectiveness out of training can save the Army vital time and resources, but it needs clear definition of battlefield tasks and equally precise ways of measuring performance.

The morning hours of 7 December, 1941, found the U.S. Army understrength, equipped with outdated weaponry, soft from years of garrison duty, and totally unprepared for extended global conflict.

In June 1950, the Army was in exactly the same posture and equally unprepared to stem the North Korean advance to the south. The lessons of unpreparedness learned at a terrible cost in men and other resources only a decade before had been forgotten or buried in the apathy generated by a belief that the possibility of another major conflict was remote.

It has been more than a decade since the termination of the Army's involvement in Vietnam, but this time the lessons of unpreparedness do not seem to have been forgotten. Major emphasis has been placed on maintaining an Army able and willing to defeat an enemy on a modern battlefield. Initiatives have not been limited to advanced weapon technology, physical fitness or new tactical doctrine.

One of the most important initiatives has been in the development of a methodology through which a systematic identification and investigation can be made of the tasks soldiers and units will be expected to perform in combat. This methodology is known as SAT, or the systems approach to training, and serves as the basis for the training requirements of the Army.

Success on the battlefield can only be achieved by skilled soldiers who are well trained on modern equipment in cohesive, well-trained, well-led units. A situation in which modern equipment is placed in the hands of soldiers poorly trained in its use invites defeat in combat. Well-trained and well-equipped soldiers in units untrained in teamwork can be expected to fare little better.

The need for well-trained soldiers and well-trained units can be met through the stabilization of personnel in units and a thorough analysis of the task requirements expected to be placed on soldiers in combat. This task analysis serves as the basis for determining the skills that soldiers will need to learn in order to be successful on the field of battle.

The task analysis sequence is similar to the backward planning techniques that have served airborne and airmobile forces so well. In order to prepare units and soldiers to perform effectively, these units have started their planning sequences with mission requirements after reaching the drop or landing zones and then have worked backward through landing, loading and training requirements.

Training resources are always in short supply during peacetime. Money, material, personnel, time and facilities are limited and in great demand by all commanders.

The systems approach to training allows trainers and commanders to make the most efficient use of those scarce resources by identifying the skills and knowledge required by soldiers who are expected to win in battle and by eliminating training tasks that do not contribute directly to success on the battlefield.

For instance, a tank crewman whose personal weapon is a pistol has little need for training with an M16 rifle. Perhaps the time devoted to that rifle training could be better spent on additional crew gunnery training in the training base or in the unit.

When the systems approach to training was used in the development of the training program for M1 tank crewmen, nearly one third of the "traditional" training given to soldiers undergoing one station unit training was discarded as being irrelevant to combat mission requirements, and many additional training needs were identified and included in the training program.



Photo: Steve Crawford

Artillerymen of the 82nd Airborne Division in a direct-fire exercise with the 105-mm howitzer, during training at Ft. Bragg, N.C.

As a result, soldiers who emerged from one station unit training were more prepared than their predecessors to meet the demands placed on them when they reached their units of assignment.

Units receiving these soldiers were able to devote more of their training time to unit training tasks because the new soldiers required less additional individual skill training. Unit mission proficiency could therefore be expected to increase.

The development of a training program using SAT requires that two basic questions be answered:

- What tasks do commanders want the soldier to perform in combat?
- What does the soldier need to know in order to perform those tasks?

The tasks identified for soldiers to perform in combat are determined from a thorough analysis of organizational missions normally assigned to units to which soldiers in a particular military occupational specialty (MOS) are assigned. This requires a clear visualization of future battlefield requirements. In the analysis of an infantry mission, for example, the identification of a need for a soldier to be effective or courageous does little to define any particular task that soldiers would be expected to perform.

The identification of the specific need for an infantryman to be able to use his rifle to kill an enemy soldier comes much closer to meeting the task identification requirement. Task identification must always be the result of an analysis of battlefield mission requirements.

Understanding the battlefield is essential if an accurate mission task analysis is to be made. Over the years, professional soldiers have used many techniques to facilitate understanding of the battlefield. Before World War II, the German Army developed large sand tables and used individual toy soldiers for the conduct of maneuvers and the training of the chain of command in the execution of their responsibilities.

Today, the U.S. Army uses several techniques to facilitate understanding of the modern battlefield, including analysis and publication of threat doctrine, map maneuvers, computer-assisted wargaming and field training exercises conducted against realistic opponents employing threat doctrine at the National Training Center, Ft. Irwin, Calif.

These endeavors assist in the develop-

COL. ANDREW P. O'MEARA JR. commanded the 1st Advanced Individual Training/One Station Unit Training Brigade, Armor, at the U.S. Army Armor Center, Ft. Knox, Ky., and is currently serving as the president of the Army Training Board at Ft. Eustis, Va. LT. COL. RAYMOND C. HARTJEN JR. has commanded armor, armored cavalry and airborne cavalry units and is now assigned as the deputy, Army Training Board.

ment of Army leaders' ability to visualize unit mission requirements on battlefields of the future and contribute significantly to the accurate identification of those tasks that soldiers will be required to perform in combat.

For each task identified, trainers and leaders must determine what the soldier needs to know or be able to do in order to perform the task.

Using a rifle to kill an enemy soldier requires that an infantryman be able to load his rifle, acquire a target, sight his weapon properly, manipulate the trigger properly and clear potential weapon stoppages, among other things. Each of these skills must be taught or reinforced if the soldier already possessed the skill or knowledge before entering the Army. Skill and knowledge requirements determine that which must be taught.

Once trainers and leaders determine what soldiers need to know and do in order to be effective on the battlefield, an evaluation must be made of the current training program to determine if those required skills and the pertinent information are being taught, if that which is being taught is adequate to meet requirements, and if unnecessary subjects are being taught.

A new, more effective training program can then be devised based on identified needs rather than on intuition, guesses and the tradition of past training.

Because the SAT requires an analysis of missions to determine the basic skills and knowledge required of soldiers, it seemed logical to begin the integration of SAT methodology into the Army training system at the initial entry training level. Until trainers and leaders determined exactly what they wanted soldiers to do, it appeared unlikely that they could determine exactly what they wanted the leaders to do on the battlefield.

Since the supervisory duties of the leaders are contingent on the duties of soldiers they lead, the integration of SAT into the service school system needs to progress from the lower enlisted skill levels through the higher levels and on through the officer training system so that military education will continue to be based on need and not on conjecture.

In the military, the bases for organization power and effective leadership are:

- *Legitimate power.* This is power generated by the organization and vested in individuals by virtue of the individual's rank in the organization. Sergeants, therefore, have power over privates and lieutenants have power over sergeants. Rewards and punishments are based on the legitimate powers of soldiers rather than on their size or any other factor. The willing compliance of subordinates to the demands of seniors is not a requirement in the use of legitimate power.
- *Referent power.* This refers to the power that the leader derives from being the role model for his subordinates. The amount of this power is directly proportional to the degree to which subordinates identify with the leader. Subordinates who closely identify with a leader see him first as a personal role model and then as the embodiment of the NCO or officer corps, the unit and the Army. Subordinates follow this leader because they respect his judgment and ability to interact with others.
- *Expert power.* This power over others is the result of knowing more about a given subject than anyone else in a group. If only one member of a group were a lawyer, any other member of the group who had a problem with the law would probably seek and heed his advice. In the military, if the leader expects to be effective, he must be an expert in his specialty or his subordinates will look to others for advice when problems arise.

Effective leadership requires the use of these powers, and the most effective lead-



Photo: Michael Green

'Opposing forces' leave a Soviet BTR–60PB armored personnel carrier used in training at the National Training Center, Ft. Irwin, Calif.

Airmobile infantrymen train in rappelling from a hovering Blackhawk helicopter.



Photo: Frederick Sutter

ers tend to use referent and expert powers most because they realize that willing soldiers generally perform better than unwilling ones. Legitimate power is often best used to reinforce the others.

The systems approach to training is effective in increasing the expert power necessary for effective leadership by concentrating training efforts on the skills and knowledge that the leader truly needs to perform his duties effectively.

For example, a tank commander who is unfamiliar with the duties of the crew in engaging a target or who does not know the duties of each crewman in the performance of preventive maintenance checks and services will discover that he is a tank commander in name only. Someone else will assume informal leadership of the tank crew.

For this reason, leader training must ensure that leaders know the duties of their subordinates in order that they may supervise them effectively. Supervisory tasks taught in the officer and noncommissioned officer education system must be based on an accurate analysis of the tasks performed by those soldiers being supervised. A leader training program that is not based on this principle cannot provide the expertise that leaders need to be effective.

SAT identifies training needs for initial entry training soldiers; it can also identify and verify training needs for leaders.

In addition to initial entry and leader training, SAT can be beneficial in the improvement of specialized training programs. Courses in supply procedures, motor pool administration, personnel procedures and many others can be more effective if course designers ask what the students in these courses will need to be able to do upon graduation and what they need to know in order to do it.

Airborne training may be a good example of a course for which SAT could play a key role in a training program revision.

What is the graduate of this course expected to do upon graduation? Simplistically, the soldier will be expected to jump with combat equipment from an aircraft, reduce any parachute malfunctions, land safely, join his unit and engage the enemy in combat. In order to do this, he must become skilled at loading and exiting the aircraft correctly, identifying and reducing parachute malfunctions, assuming the proper landing position, landing and releasing his parachute harness. There are, of course, a number of other skills and bits of information he needs to acquire.

The next question to be answered pertains to an analysis of the existing training plan and its comparison to that training necessary to meet the training need.

Joining his unit on the drop zone and engaging the enemy are skills not now learned in airborne training. Airborne training does, however, teach the rest of the necessary skills.

Is the time devoted to training consistent with that which is necessary to acquire the skill? Airborne training is now 19 days in duration.

In Vietnam in 1967, a shortage of qualified airborne replacements in the 1st Brigade, 101st Airborne Division, led to the establishment of an airborne training course in the brigade base camp that produced qualified paratroopers in just five days. General officers and selected staff officers undergo an abbreviated airborne training course that lasts less than three days. Civilian parachute schools qualify parachutists in a weekend.

Why does the discrepancy between training times exist? Physical conditioning should not be a factor, since airborne candidates must pass a physical training test to get into the school, and no special physical skills must be necessary in order to successfully parachute if generals, se-



Infantry officer candidates learn the basics at Ft. Benning, Ga.: leaders' tasks must also be systematically defined for effective training.

lected staff officers and civilians do not also need them. All parachutists are volunteers, so motivation must not be an issue. Morale and esprit are not skills and are developed in the unit.

Perhaps SAT can provide the answer. It certainly provides a systematic structure for asking important questions.

Linked closely with SAT is the concept of standardization: uniformity both in the method for determining training requirements in a specific MOS through all skill levels and in the application of task proficiency measurement standards in the training base and in deployed units.

SAT is the appropriate instrument for achieving standardization in a given MOS through all skill levels. All military occupational specialty and skill-level training programs must use SAT if standardization in training is to be achieved.

The other facet of standardization is found in the uniform application of task proficiency standards, in both the training base and in units deployed around the world.

The uniform application of task proficiency measurements also includes an analysis of each standard to determine its validity. Take, for instance, the measurement for crew qualification on the tank crew qualification course.

Is it realistic to allow a tank crew that fails to hit the first main gun target to proceed through the course and still qualify satisfactorily? The tank crew that misses its first tank target in combat has a high probability of being destroyed in return. A more realistic measurement criteria for tank crew qualification might be to issue a given number of main gun rounds to a crew, require that the crew fire at each main gun target until it is hit before moving on to the next target and count as qualified those tank crews that run out of targets before they run out of ammunition.

Airborne qualification is another example of a standard that could be questioned. How or why did five jumps become the measurement for qualification? Could a parachutist be considered qualified after only one jump or should qualification occur after one practice jump and one equipment jump? Does a parachutist need to experience a night jump before he is considered fully qualified?

Other standards could bear investigation as well. Is proficiency at a specific event on a physical training test required in order to be successful in combat? How does that particular exercise contribute to mission success?

If the need for proficiency in the event cannot be documented for everyone taking the test, perhaps the event should not be used as a proficiency standard. The time standards for weapons assembly and disassembly used as measurements of proficiency in the training base often have little application in field units. If standards are not useful in units, then they should not be used in training.

Earlier, soldier stabilization was identified as being one of the requirements for unit proficiency, yet in spite of efforts such as the new manning system and COHORT (cohesion, operational readiness and training) units, soldier turbulence still exists in units and probably will for some time to come.

If stabilization in training and the uniform application of proficiency standards can be achieved, much headway will be made toward lessening the impact of soldier turbulence in units.

Standardization of training is essential to a combat-ready Army, so that soldiers who learn drills and crew duties in one unit can then expect to perform the same duties and actions to the same standards in any other similar unit. "Train-up" time for new soldiers in units can then be reduced or eliminated. That is the essence of the standardization concept.

The systems approach to training and standardization appears to be absolutely necessary if trainers and leaders are to reduce the shortfall between the capabilities of the Army's combat equipment and the capabilities of its soldiers and leaders to use that equipment successfully on the battlefields of the future.

Soldier and leader training must be concentrated on the acquisition of necessary skills and not diluted by unnecessary or counterproductive training.

Standardization in the methodology for determining training requirements and in the application of proficiency measurements are closely related. Their use in training today ensures success in combat tomorrow.

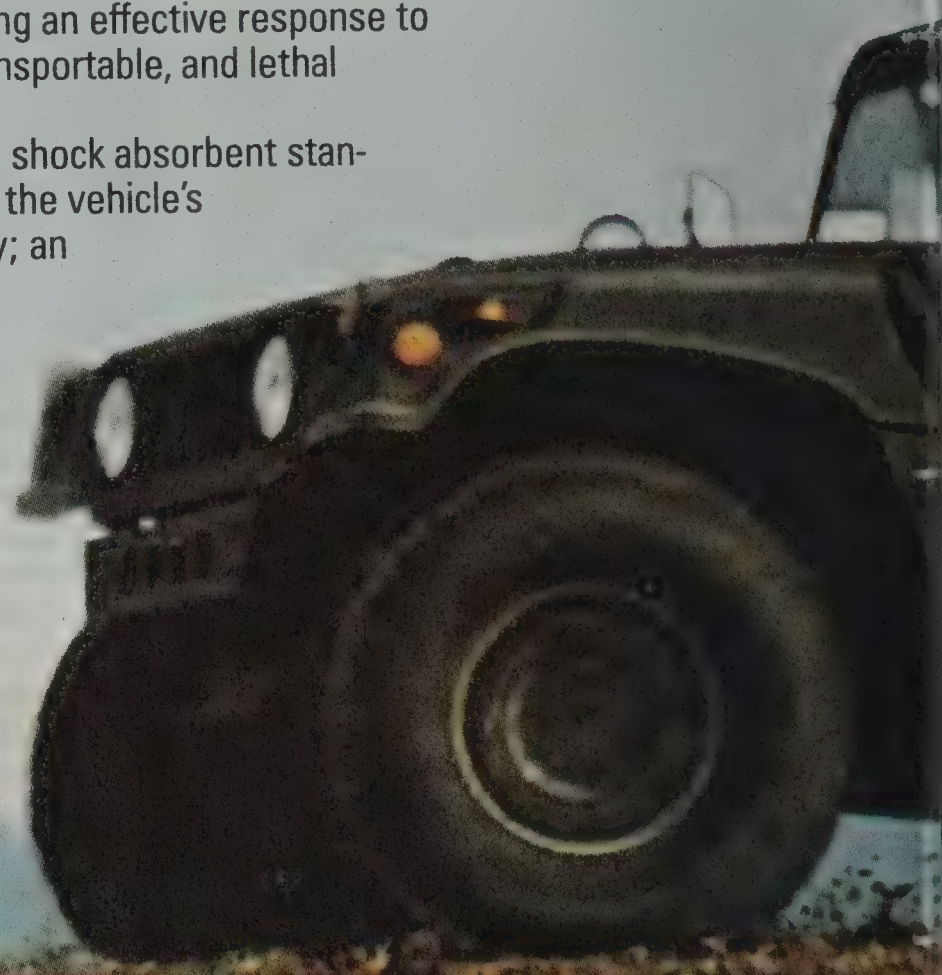


Where, Where?

A sense of humor and a little guidance are always appreciated by those patients undergoing the rigors of a day spent in an Army medical facility. Some thoughtful and creative person at DeWitt Army Hospital at Ft. Belvoir, Va., labeled the telephone booths in the outpatient clinic with signs that simply say: "Hear, Here."

COL. GLENN E. FANT
AUS, retired

RED-T



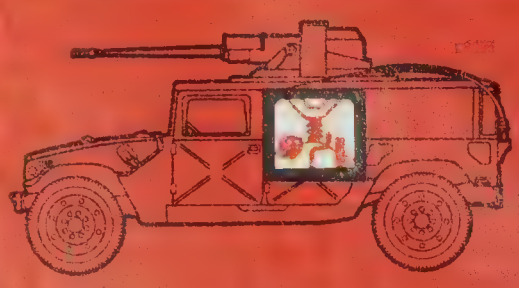
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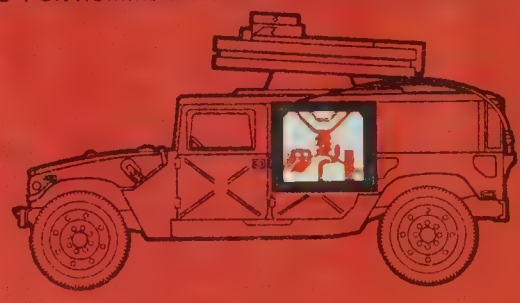
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Mussolini's Chemical

By Col. Stanley D. Fair
U.S. Army, retired



The use of gas in the Ethiopian campaign of 1935–36 spurred the buildup of retaliatory stockpiles that deterred the use of such weapons in World War II; there are some disturbing parallels in the present day.



In 1946, the chief of the U.S. Army Chemical Warfare Service, Maj. Gen. Alden H. Waitt, wrote that if the Germans had used chemical weapons against the Allied forces at Normandy during World War II, it "might have delayed our invasion for six months and made later landings at new points necessary."

Yet, the Germans decided against such use, and authorities on the subject have offered several explanations for that decision.

One of the most unusual reasons for the German nonuse of gas was provided by Hermann Goering in his testimony at the Nuremberg war crimes trial.

When asked why Germany did not use gas at Normandy, the former marshal of the Reich replied: "The horses." He explained that the Germans did not have gas masks that their horses could tolerate and that the German transportation system in 1944 was heavily dependent on the use of horses. If the Allies had responded with chemical weapons, the German forces would have become immobilized because of the vulnerability of their horses.

Other factors that acted as restraints on the initiation of chemical warfare by either side during World War II include the legal constraint of the Geneva Protocol of 1925, the influence of public opinion, and the lack of acceptance of gas as a weapon by the military. The most important inhibition to the first use of chemical weapons, however, was the threat of enemy retaliation in kind, as pointed out in Marshal Goering's testimony.

Contrary to Marshal Goering's opinion regarding the importance of the military consequences of retaliation in kind was the greater fear that any use of gas would soon escalate from the battlefield to the attack of cities. What is surprising is that military historians have failed to appreciate the significance of Benito Mussolini's chemical war, waged in Ethiopia in 1935–36, in providing the political leaders of Europe with an all too graphic demonstration of what could happen to their civilian population.

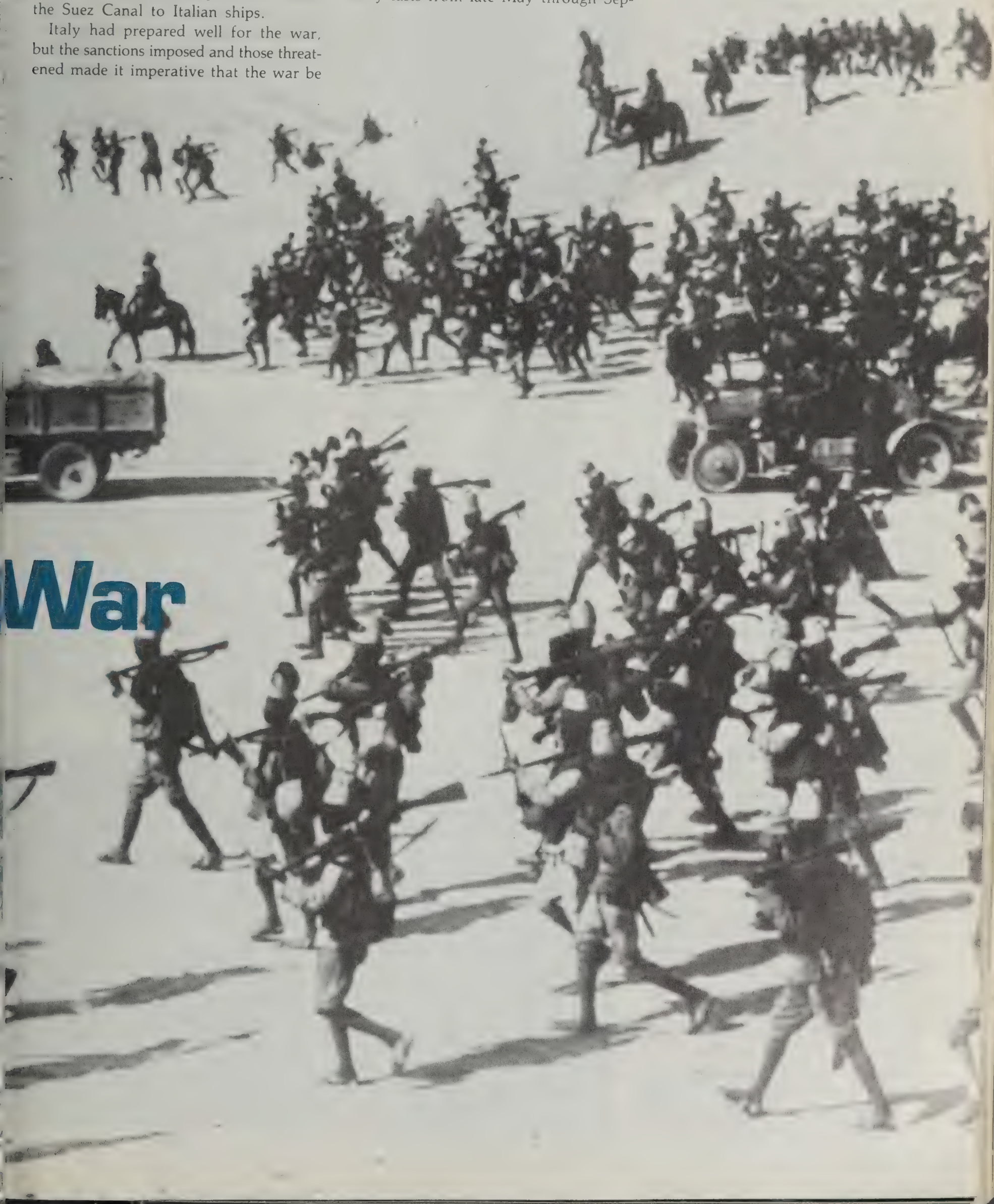
On 3 October, 1935, Italian forces invaded Ethiopia from Italian Somaliland and Eritrea without declaring war and following charges by Italy that Ethiopia had violated their 1928 Treaty of Friendship. The League of Nations condemned

the act as unprovoked aggression, and on 28 October, 1935, economic sanctions were voted against Italy. These sanctions forbade member nations from providing financial aid to Italy, but they neither cut Italy off from importing oil nor closed the Suez Canal to Italian ships.

Italy had prepared well for the war, but the sanctions imposed and those threatened made it imperative that the war be won within a matter of months.

The problems associated with support of their forces at such a distance from home and the prospect of fighting during the rainy season in Ethiopia, which normally lasts from late May through September, were additional incentives for the Italians to end the war quickly.

The opponents were a complete mismatch. Italian forces were well trained and ready for combat, having spent from



War

one to three months on maneuvers just before the invasion. They were equipped with modern weapons and outnumbered the Ethiopian forces by three to one.

Except for 20,000 troops in the Imperial Guard, the vast majority of Ethiopian forces were tribal levies led by native princes who had little or no training in modern battle tactics.

Members of the Imperial Guard had modern rifles, but the rest of Emperor Haile Selassie's army was equipped with spears and old small arms used for hunting. The Italians had 1,400 artillery pieces and about 325 planes; the Ethiopians had two or three batteries of light mountain artillery and 12 planes.

It would appear from this description of opposing strengths that the Italians would have little difficulty in defeating the Ethiopian forces rapidly.



Nevertheless, the Ethiopian forces were able to slow the advance of the main Italian attack force, the northern armies under Gen. Emillo di Bono, by using guerrilla tactics, and on 28 November, 1935, Benito Mussolini replaced Gen. di Bono with Field Marshal Pietro Badoglio.

Unlike his predecessor, he chose to use the chemical weapons which the Italians had begun shipping to Eritrea over three months before the invasion. The Italian forces were prepared for chemical warfare: the army divisions included chemical warfare units and gas masks were available for all front-line troops.

The Ethiopians were completely unprepared except for some gas masks that were provided for the Imperial Guard. The tribal levies were especially vulnerable to the burning effects of mustard gas because they wore only light togas and cotton trousers and went barefoot.

There was no possibility, either, that the Ethiopians could retaliate with gas, for they did not have the supplies, facilities for delivering it, or the knowledge of how to use such a weapon.

Why did Marshal Badoglio believe that gas would be effective in supporting his offensive? The answer appears to be, in part, the experience of Italian forces during World War I. In at least two major battles the Italians suffered heavy losses from the enemy's use of chemical weapons: on the plateau of Doberdo in June 1916, and at Caporetto in October 1917. The Austro-Hungarian use of a chlorine-phosgene mixture at Doberdo has been rated as one of the most effective gas-cylinder attacks of World War I.

The Italians suffered approximately 6,000 casualties, about 5,000 of them fatal. At Caporetto, where the Germans for the first time in the war used gas projectors, the success of the attack was, for the most part, the result of their use of large amounts of gas to outmaneuver the Italians.

The heavy bombardment with gas and high explosives produced panic among the Italian forces at Caporetto, but it was not the sole cause of what has been called "the greatest single disaster of Italian arms in modern history."

Pacifism among the Italian forces, spread by German agents operating from Spain after the collapse of the Russian war effort the previous July, played a major role in the surrender of over a quarter of a million Italian soldiers.

The retreat of the Italian forces from Caporetto, described vividly by Ernest Hemingway in *A Farewell to Arms*, continued for 100 miles to the Piave River where the Italian front finally held. This major defeat was a severe blow to the national morale of Italy, but Marshal Badoglio took over as chief of the general staff and organized a new army.

However, the past was not the only influence on Marshal Badoglio's decision to use chemical weapons against Ethiopia. He was interested in the potential of aero-chemical warfare (the delivery of gas weapons from planes), a subject that had concerned the military of all nations since World War I. Chemical weapons had not been disseminated by aircraft during World War I because the available planes could carry only a small payload and the sole chemical agent that would have been effective in those amounts, mustard gas, was not introduced until late in the war. If the war had lasted into 1919, however, the British would have had a bomber force with the capability to attack Berlin, and the supply of mustard gas would not have been a problem.

Immediately following World War I, American chemical industries initiated a massive publicity campaign to obtain economic protection from foreign competition. Spokesmen stressed that the German advantage over the Allies in producing chemical agents during the war was due to industrial superiority.

Since German chemical plants were not dismantled after the war, the United States needed a large industrial base for national security reasons. The chemical industries found allies for their campaign in those of the American military who believed that U.S. forces should be better prepared for chemical warfare in the future than they had been in World War I and who advocated the establishment of a Chemical Warfare Service as a permanent branch of the Army.

COL. STANLEY D. FAIR, U.S. Army, retired, served for 26 years with the Chemical Corps. He has been a consultant to the U.S. Army War College and is author of a U.S. Arms Control and Disarmament Agency study, "Deterrence of Chemical Warfare."



The Italian Army's Colonial Rifles, recruited from Eritrean natives, played a large part in the 1935–36 campaign; they are shown here on the march after the war, leading camels burdened with broken-down 65-mm mountain howitzers.

The aim of the publicity campaign was to magnify the importance of chemical warfare, and the articles written by the military, especially on the lethality of experimental war gases and the potential of aerochemical warfare, were given wide distribution by the American chemical industries. The editorial comment, "Prohibiting Gas Warfare," in *The New York Times* on 9 January, 1922, illustrates how convincing the articles were:

> Since the armistice, the chemists have produced gases of extraordinary deadly quality, and they have declared that by dropping them in bombs from airplanes great numbers of troops could be destroyed and communities of noncombatants could be "wiped out."

As the publicity campaign continued, fiction writers joined the businessmen, scientists and soldiers, and wrote terrifying stories of future wars involving the use of bombs and spray tanks filled with imaginary superlethal war gases in the attack of sleeping cities. Gas came to be viewed as a strategic weapon.

It became commonly accepted that aerochemical warfare would be the decisive factor in the next war, bringing an enemy to his knees by the mass destruction of his civilian population. These exaggerations frightened the public, and their political leaders reacted by trying to outlaw the use of chemical weapons in war.

The first attempt, the Conference on the Limitation of Armaments, met in Washington, D.C., in 1921, and although the resulting treaty was not put into effect, its provision against the use of chemical weapons in war became the basis for the Geneva Protocol of 1925, which has been ratified by most nations of the world.

Italy was a participant in the Washington conference and ratified the treaty in 1922, although it was not binding. Italy ratified the Geneva Protocol on 3 April, 1928. Ethiopia ratified it on 20 September, 1935, after learning that Italy was stockpiling chemical weapons in Eritrea.

Regardless of the legal restraint against the initiation of chemical warfare, military interest in chemical weapons remained high through the 1920s and into the 1930s because the fear instilled by the publicity campaign in the United States had spread throughout the world. In Italy the search for new war gases, begun during World War I, continued, and improvements on delivery systems were investigated.

In 1923, a year after Benito Mussolini came to power, a military chemical warfare service was established and a proving ground for chemical weapons was built in northern Italy. The Italian Army held maneuvers in which the use of chemical weapons was simulated, and experiments were conducted in the Alps and in the Libyan desert with various types of chemical weapons. Apparently, Marshal Badoglio considered the Ethiopian–Italian War a golden opportunity to combat-test the potential of aerochemical warfare.

Marshal Badoglio's first uses of gas bombs were of little military value: tear gas bombs were not effective because the Ethiopians learned to scatter, and mustard gas was dropped in thin-walled metal containers that made relatively small puddles on the ground. Then, the Ethiopian forces abandoned their guerrilla tactics, which had proved successful against the Italians, and began to concentrate, thus inviting formal battle. About the same time, Marshal Badoglio started using mustard gas in bombs and as a spray.

Maj. Gen. J. F. C. Fuller, the British military historian, was in Ethiopia during



Emperor Haile Selassie warned the League of Nations about the potential of poison gas.

Photo: UPI Bettmann Archive



Dismounted cavalrymen of the Ethiopian Imperial Guard occupy trenches west of Adowa after the fall of that border city to Italian forces, October 1935.

Photo: UPI Bettmann Archive



Benito Mussolini addresses a mass rally in Rome in 1934.

Photo: UPI/Bettmann Archive

the war and provided the following account of Italian chemical warfare tactics:

> The sole Italian difficulty was how to secure their flanks whilst moving through the mountains. . . . Instead of picketing the heights [Badoglio] gassed the areas bordering the flanks of his advance. The result was that, shortly after his enemy entered these protective zones, thousands were wounded by gas burns. Also he gassed the area in rear of them, as well as their obvious lines of retreat, and then by aerial attack drove them into these areas.

Marshal Badoglio used these tactics from late January until the end of organized resistance in early April 1936, and they were effective in producing heavy casualties among the Ethiopians as well as panic and lowered morale.

The most extensive period of aerochemical warfare began in the middle of March, when the emperor with his Imperial Guard set up headquarters in caves near Quoram, where other Ethiopian forces were already in position, blocking the Italian advance to Addis Ababa.

While concentrating his forces, Marshal Badoglio attacked Ethiopian positions almost every day with mustard-gas bombs and spray from 14 March until 30 March. Then, Haile Selassie left the protection of his positions in the mountains and moved his forces to attack the Italians before the Italian general could complete his force consolidation.

The attack failed, and as the Ethiopians retreated through Quoram, Marshal Badoglio's planes pounded them every day for four straight days with mustard-gas and high-explosive bombs. Civilian casualties in and around Quoram were heavy.

Mussolini justified his use of chemical weapons in Ethiopia in a message to the League of Nations on 9 May, 1936, by claiming that such use was reprisal "in punishment of such abominable atrocities as those committed by the Ethiopian forces, which would be inconceivable in civilized countries." On 12 May, the Italian delegation left Geneva, refusing to discuss the war or the use of gas any further. That month Italian forces reached Addis Ababa, and Marshal Badoglio rode triumphantly into the city.

The war was over, successfully ended by the Italians before the League of Nations' sanctions had much effect and before the Ethiopian rainy season.

The emperor and his family left the country to live in England, and on 30 June, 1936, he addressed the Assembly of the League of Nations:

> It is my duty to inform the governments assembled in Geneva of the deadly peril which threatens them by describing to them the fate which has been suffered by Ethiopia. It is not only upon warriors that the Italian Government has made war, it has, above all, attacked populations far removed from hostilities. . . . Sprayers were installed on board aircraft so that they could vaporize, over vast areas of territory, a fine death-dealing rain. . . . It was thus that, from the end of January 1936, soldiers, women, children, cattle, rivers, lakes and fields were constantly drenched with this deadly rain. . . . The very refinement of barbarism consisted in carrying devastation and terror into the most densely populated parts of the territory. . . . In tens of thousands the victims of the Italian mustard gas fell . . . I . . . come . . . to give Europe warning of the doom that awaits it . . . .

The American reaction to Mussolini's chemical war could be described as a national shrug of the shoulders. The U.S. military "denied there were any lessons to be learned from the use of gas as a weapon of opportunity against a totally unprepared enemy in a colonial war," according to Frederic J. Brown's *Chemical Warfare: A Study in Restraints* (Princeton University Press).

The State Department waited until a year after the war was over before it even gave consideration to an attempt to gain American ratification of the Geneva Protocol, which had been rejected by the Senate in 1926. The public response at the time was most likely a reflection of the American government's pledge of strict neutrality, a feeling that "it is none of our business."

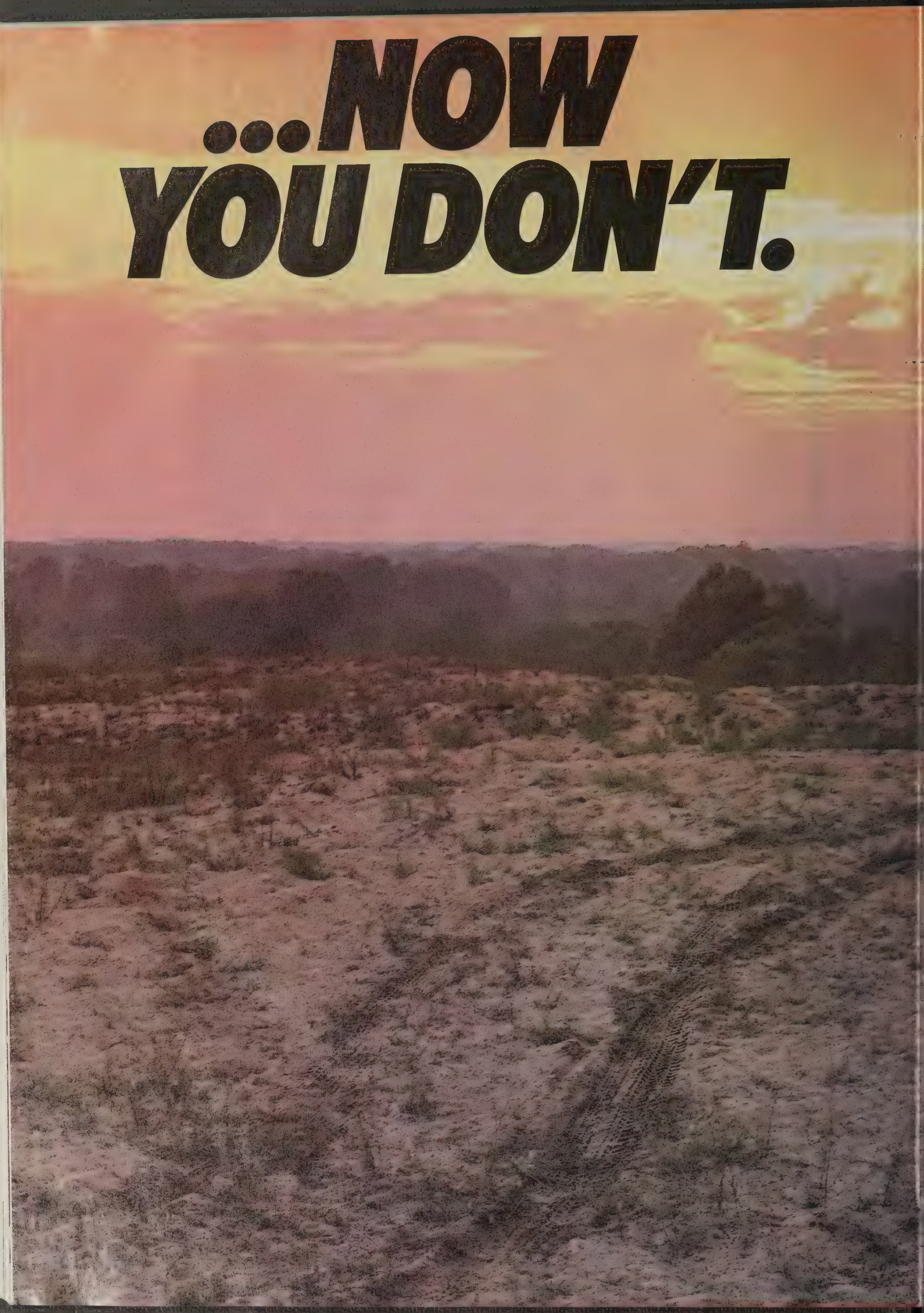
Part of the reason for this apparent indifference, of course, was the severe economic depression which held the attention of the American government and people. Another major factor was the dearth of news published in the United States about the use of gas in Ethiopia. The American press in the spring of 1936 seemed to be focused on economic problems, the upcoming presidential election, and preparation for the Olympic Games, scheduled to be held that summer in Berlin.

It was not so much a lack of concern for the plight of the Ethiopians as it was

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a competition for available space in newspapers and magazines. Evidently American editors decided that their readers would be more interested in a debate on the boycott of the Olympics and speculation on the Republican candidate for President than reports on chemical warfare in geographically remote Ethiopia.

In all fairness, however, there was a news blackout on the war. The Ethiopians disliked and mistrusted foreigners, and Marshal Badoglio had instituted strict censorship of reports on the war because he did not want the world to know he was using gas. The reports on Mussolini's chemical war that appeared in print came from the various ambulance services and Red Cross units that helped the Ethiopians and from Ethiopians who hoped to get some assistance from the League of Nations and Great Britain.

While these reports were published extensively in Europe, they appeared infrequently in the American press. Princess Sehai, the 16-year-old daughter of Haile Selassie, for example, sent the following message to England during the war, which was printed in *Time* magazine:

> For seven days without a break the enemy has been bombing the armies and people of my country, including women and children, with horrible gases. Hundreds of my countrymen are screaming and moaning with pain. Many are unrecognizable since the skin has burned from their faces.

The military in Europe followed the events in Ethiopia closely because Marshal Badoglio seemed to be proving that aerochemical warfare had the military capability so long theorized. Gen. Fuller wrote that: "It is no exaggeration to say that mustard gas, sprinkled from aeroplanes, was the decisive tactical factor in the war. . . ."

Maj. Gen. Sir Henry F. Thuiller, who had been director of Allied Gas Services in World War I, shared Gen. Fuller's opinion:

> The use of the gas weapon definitely shortened the war by about nine months, or perhaps more. . . . It also had the effect of reducing the total sufferings and loss of life. If the war had been prolonged to the following year, the advance to and capture of Addis Ababa would almost certainly have entailed heavy fighting, and this would inevitably have caused considerable casualties to the Italian forces. It may also be argued that such prolonged operations would have caused more losses and more wounds and suffering to the Abyssinians than were caused by the mustard gas.

Political leaders in Europe, in sharp contrast with their American counterparts, were deeply concerned by the reports on Mussolini's chemical war. Whereas American military and political leaders did not believe cities in the United States were seriously in danger from aerochemical attack, European leaders had a far different perspective.



Civilian chemical defense measures proliferated in Europe in the late 1930s: members of Italy's "Young Wolves," the fascist party youth organization, try on their gas masks.

The anxiety in Europe was revealed in public speeches such as the address by British Foreign Secretary Anthony Eden to the League Council of the League of Nations on 30 April, 1936: "How can we have confidence that our own folk, despite all solemnly signed protocols, will not be burned, blinded, done to death in agony hereafter?"

The Spanish Civil War was the bridge between the Ethiopian–Italian War and World War II, beginning two months after Marshal Badoglio rode into Addis Ababa and ending six months before Adolf Hitler's armies marched into Poland. It seemed a certainty that chemical weapons would be used during the fighting because Mussolini was supporting the forces of Gen. Francisco Franco and because of earlier reports that Spanish aircraft had dropped mustard-gas bombs in Morocco.

While there were accusations on both sides, there was no proof that chemical weapons, other than possibly tear gas, were used by either side during the war in Spain.

However, the memory of Mussolini's chemical war in Ethiopia and Haile Selassie's warning gave credence to reports, in December 1936, that Madrid had been attacked with chemical weapons. Such allegations coming from Spain and new accounts of Japanese use of chemical weapons in China heightened fears in Europe that if war came, it would include aerochemical attack of cities.

In December 1936, *Fortune* magazine published an article called "Gas Masks" that showed civilians wearing gas masks in most of the countries of Europe and in Japan. The article claimed that, in the United States, there were "no panic policies, no gas propaganda, and no cheap civilian masks."

The War Department prepared a pamphlet in 1936 with the title, "Passive Defense Against Air Attack," which contained information for civilian defense against an enemy's use of chemical weapons, but only 200 numbered copies were produced and they were classified. It was far different in Europe where the threat of a future gas war was real.

Political leaders in Europe appeared to endorse some of the exaggerated claims being made for the power of aerochemical warfare, but it was partly a propaganda ploy. The public needed to be united againt a potential enemy who, it was charged, was preparing for a gas war against cities. Also, by emphasizing the possibility of aerochemical attack, the leaders could gain the attention of



UPI/Bettmann Archive

Italian mountain howitzer battery in action during the battle of Tembien, February 1936.

their populations on the general subject of defense against air raids. Since protection against gas was relatively easy compared with defense against high explosives and incendiaries, the public information programs stressed gas defense.

The first guide on civil defense published in England covered only antigas defense. By April 1936, the British government, reacting to the intense gas attacks in Ethiopia, reassured its people that an effective gas mask for civilians had been designed.

A year later five million civilian gas masks had been manufactured, and, according to one source, during "the last week in September 1938, on Hitler's invasion of Czechoslovakia, 30 million masks were issued to the public." The German government had made its first issue of civilian respirators in August 1937.

It was obvious that each side in the approaching European war suspected the other of preparing for chemical warfare and shared the fear of aerochemical attack of their cities, as Haile Selassie had warned. Yet, European political leaders felt they could not rely only on the passive measure of gas protective equipment and the hope that their enemies would respect the Geneva Protocol. Mussolini's chemical war had shattered their trust in the treaty.

Some additional deterrent was needed, and the major European nations, with an eye on the reservation of some signatory powers to the Geneva Protocol, which was regarded as sanctioning the right to retaliate in kind, began to build up their chemical weapon stockpiles.

As Julian Perry Robinson, an authority on chemical warfare, noted:

> The overriding considerations in CW [chemical warfare] contingency planning were the intentions of potential enemies. The deeper enemy commitments to offensive CW preparedness appeared to be, the weaker the case for relying solely on antichemical defensive equipment and a token retaliatory stockpile.

Certainly, Mr. Robinson's observation on the pre-World War II situation is appropriate today. The disturbing similarities between Ethiopia in 1936 and the chemical war being waged by Soviet forces in Afghanistan leave no doubt as to the deep "commitments to offensive CW preparedness" demonstrated by the Soviet Union.

Members of the U.S. House of Representatives, in particular, need to heed Haile Selassie's warning: American forces and American allies and their populations are in danger from the possible use of chemical weapons by Soviet forces in a future war.

If gas is to become once more the unused weapon in such a conflict, American forces must have a modern capability with chemical weapons which can be used to bargain for a verifiable international treaty that would eliminate chemical weapons from the armaments of all nations or, failing that, to credibly threaten Soviet leaders with retaliation in kind.

As in World War II, the United States cannot rely "solely on antichemical defensive equipment and a token retaliatory stockpile."

Dangerous Relations

While serving as an Army physician, it was my duty to examine candidates for military service to determine their physical fitness for duty. One candidate had checked only three positive items on his medical history form, but they were items that were infrequently checked.

The first was "history of gunshot wound." The wound had been minor, but in obtaining more information I found he had been injured by his brother-in-law. When I asked how the incident occurred, he explained that his sister had recently married the fellow and the couple had been arguing. The husband had grabbed a gun and shot at her, hitting my examinee instead.

While shaking my head over this strange story, I moved on to the second item checked, which was "history of head injury." He explained that he had been sitting in the kitchen when, without warning, his brother-in-law had struck him with a pan. Again, the wound was not serious but had required stitches. I made a comment about his brother-in-law being a bad character, and my examinee readily confirmed my opinion.

The last block checked was "nervous." I looked at him and said, "Are you nervous?"

His answer was to the point: "Only when I'm around my brother-in-law."

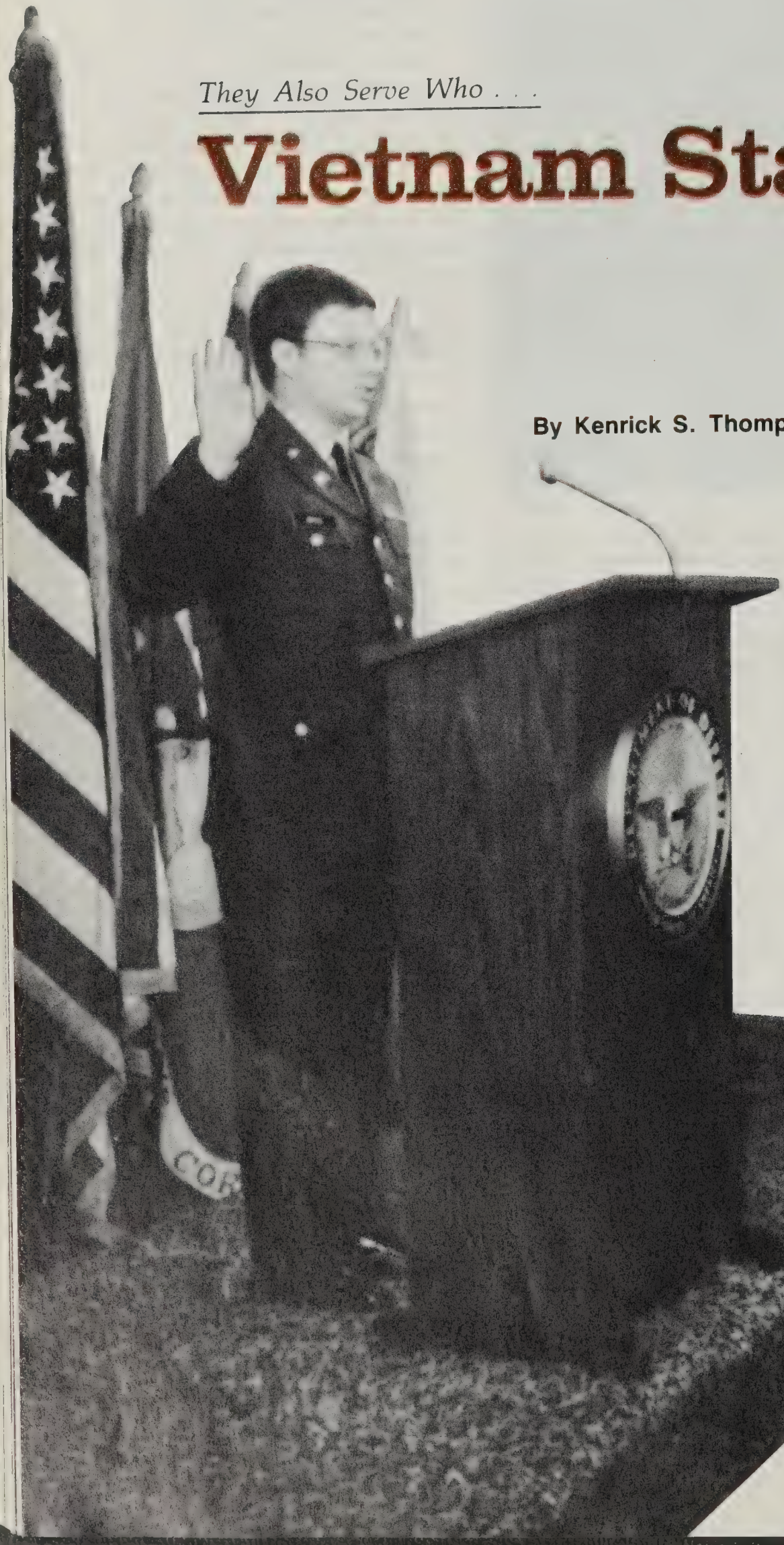
I decided the Army would be a safe place for him.

Jo G. Sweet, M.D.

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They Also Serve Who . . .

Vietnam Stateside: No



By Kenrick S. Thompson

Histories of U.S. involvement in Vietnam have usually focused on the trials and tribulations of the combat soldier in Vietnam and after his return to the United States—an understandable focus which has increased the public's awareness of the Vietnam veteran's plight. Publicity concerning the debilitating consequences of Agent Orange and of post-traumatic stress disorder (PTSD) has, of course, suggested that we should be concerned about the physical and psychological well-being of those who served in Vietnam.

But what about the Vietnam-era veterans who were *not* in-country and, more specifically, those who served in continental U.S. (CONUS) assignments during the conflict? Some observers have suggested that these soldiers experienced a different kind of personal anguish, in part because of their guilt about not serving in Vietnam and because of the nature of their assignments. This is one soldier's story—my story—but it is more than a personal account. It illustrates how the war affected every member of the armed forces and how Vietnam and its controversies touched the lives of all who served during that era.

I graduated from high school in 1963, which made me a prime candidate for induction into the armed forces and for service in Vietnam. My parents encouraged and supported my attending college, and so I applied for and received a 2-S deferment. At Ohio State University, I became a member of the nation's then largest Reserve

Vietnam-era stateside duty in an induction center was no bed of roses for an adjutant general officer who struggled to maintain the integrity of the draft as support for the war evaporated.

Easy Duty'



and J3 Officers' Training Corps (ROTC) detachment.

After earning my commission in 1967, I decided to enroll in graduate school. In doing so, I sought no exemption from duty in Vietnam. I continued my education because of my desire to become a professor of sociology. Effective 2 January, 1968, I was granted a delay of entrance on active duty.

In 1970, the Kent State tragedy occurred and, shortly after that, Ohio State University closed its doors because of civil disturbances. I can remember my apprehension that I might not be able to earn my master's degree before going on active duty. I was scheduled for the officer basic course in the Adjutant General School at Ft. Benjamin Harrison, Ind., on 7 September of that year. The Department of the Army informed me that there was no alternative. I understood, but it was frustrating to realize that anti-war sentiments were interfering with the then two most important goals in my life: earning an advanced degree and serving as an Army officer.

The university's doors opened just in time for me to graduate, and I went to Ft. Benjamin Harrison as scheduled. My first choice of CONUS assignment was California. Nearing completion of the basic course, I learned that my first permanent duty station would be the Armed Forces Examining and Entrance Station (AFEES) in Los Angeles, effective 15 November, 1970. My will-proceed date to Vietnam



The October 1967 march on the Pentagon was one of the largest and most visible antiwar protests of the Vietnam era: a riot formation of soldiers formed to keep demonstrators away from the building's Mall entrance.

was set for June of 1971. Shortly before that time, Army Recruiting Command, Hampton, Va., issued orders stabilizing all AFEES personnel for the duration of their current assignments.

AFEES duty proved to be a real challenge, especially in Los Angeles. The year before I arrived, the Los Angeles AFEES was involved in numerous protests and demonstrations, including events that posed threats to life and limb for station personnel. Late 1970 and early 1971 turned out to be no exception. During my first six months at the station, harassment of military personnel when outside the building was so intense that officers and enlisted men were encouraged to wear civilian clothes to and from duty, and lockers were provided to facilitate this.

Generally, such confrontations were confined to verbal abuse, but in some cases the situation became very grave indeed. Upon entering my office one morning, I observed no less than six small-caliber bullet holes in one window facing a side street. My first reaction was one of relief: I frequently worked late and could have been sitting in front of that window when the incident occurred.

Reactions to the uniform were quite favorable by most older residents of Los Angeles, but the young were a different story. During my tour, I was verbally harassed and even spat upon by youthful demonstrators who opposed America's involvement in Vietnam. While the Charles Manson trial was held, members of his "family" conducted all-day protests in front of the courthouse. During one of my regular visits to the Los Angeles police department and Los Angeles County sheriff's office to investigate potential enlistees' police records, I crossed paths with some of these people. As I walked by in my uniform one morning, an unidentified "family" member yelled "Pig!, Pig!" and spat in my direction.

KENRICK S. THOMPSON became a Reserve officer in the Adjutant General Corps in 1967. He later served at the AFEES, Los Angeles, and now teaches at Northern Michigan University.

What took me to the police department and sheriff's office on a regular basis was my position as "moral waivers" officer at the AFEES. Obviously, a criminal record affects whether a person will be accepted into the military, especially in terms of enlistments. The modern volunteer Army concept was fully operational in 1971, and a single felony conviction could disqualify a man for enlistment.

During 1971 in the state of California, for example, conviction for possession of marijuana constituted a felony. Serving as moral waivers officer revealed a disturbing irony involving those men who sought to avoid induction in comparison to those who wanted very much to enlist. It was almost more than I could tolerate emotionally when, in the same day, I dealt with young men who tried to falsify a criminal record in order to avoid the draft and processed others who offered bribes encouraging me to erase criminal violations from their enlistment applications.

A particularly interesting duty assignment for military personnel at the AFEES was manning the reception desk. On a regular basis, young men scheduled for preinduction and induction examinations would arrive at the station under the influence of illegal drugs. One young man actually injected himself with heroin in the reception area and subsequently collapsed from an overdose. Although I did not have an opportunity to actually witness the procedure, another popular, although transparent, strategy involved ingesting large quantities of sugar immediately before preinduction screening in the hope of being diagnosed as diabetic. The naiveté of those who tried such procedures never ceased to confound me.

Another technique I witnessed on several occasions involved young men who reported to the reception desk naked. We always kept a large medical gown handy behind the desk in order to deal with this situation. There was an inescapable mystery to AFEES duty during the Vietnam era: we could never be sure what to expect next.

One high-class induction evasion scam that went on during the late 1960s and early 1970s involved the installation of orthodontic equipment. The plan was quite simple—the military was not equipped to support orthodontic treatment, and if it could be demonstrated that the treatment was absolutely necessary and sound, a man could be exempt from induction until the regimen was completed. During my tour of duty, a Los Angeles orth-



odontist was involved in a federal suit alleging that he installed braces on many young men simply because they wanted to avoid the draft. This dental surgeon went so far as to document the damaging psychological effects of removing the orthodontic appliances from young men who "suffered from malocclusion."

I was gratified to learn that this particular orthodontist was convicted. The most disturbing aspect of this scheme involved economic status. The cost of bogus installation of orthodontic appliances was estimated at somewhere between $5,000 and $10,000. I frequently asked myself, "Who is paying for this falsification?" Thinking that the parents or close relatives of these young men were the likely financial backers of such scams always sent chills up my spine.

One of the more humorous techniques for avoiding military service was illustrated one morning when a young man scheduled for preinduction screening walked into the station masquerading as a rabbit. It was, in fact, quite an expensive costume. As he approached the desk, I walked up to him and, summoning all my faculties to avoid laughing, told him: "Son, you're going to have to take off that rabbit suit before you go to medical for your physical examination."

In an unpredictably level tone of voice that implied no particular hostility, he replied: "This is not a costume. . . . I *am* a rabbit."

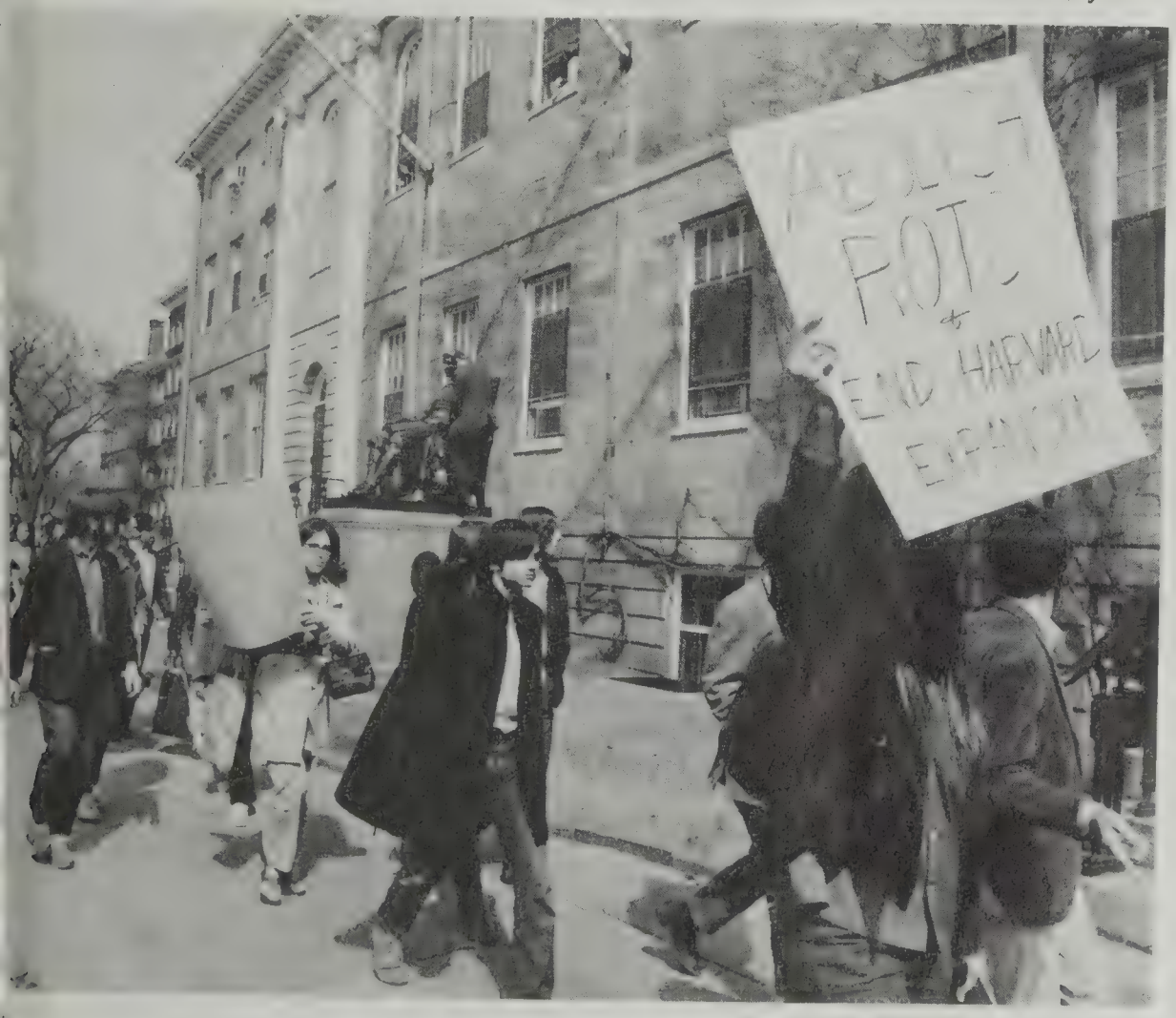
Quickly searching for an appropriate answer, I managed to catch this fellow off guard. I answered: "OK, then, you're a rabbit, but when they get around to one key part of your examination, it's going to look a little funny when you have to unzip."

On his way to the medical section, the young man entered the restroom and removed the costume.

One of the most emotionally draining duties of being an induction officer dealt with informing young men who refused conscription that they were in violation of the Selective Service Act of 1967. After completing their paperwork, inductees were escorted into the "oath room." Because some men refused to serve, the military devised a method for objectively determining who those people were. Before administering the oath of office, the officer in charge would instruct the assemblage to take one step forward if they accepted induction into the U.S. Army. Those who did not take the step were then led out of the room for counseling in terms of their violation and legal status.

Usually, I would merely inform these men of their situation and what could happen to them, ask if they had any questions, release them from the station and inform the appropriate authorities of their induction refusal. There were occasions when representatives of the Federal Bureau of Investigation would come to the station in order to take custody of those who persisted. Watching those young men leave the AFEES in handcuffs always troubled me, despite my personal commitment to the armed forces.

Sometimes, these counseling sessions became more complex and involved potentially serious consequences, such as those during which men threatened suicide. Although all personnel were instructed to treat any mention of suicide as serious business, there were occasional situations that bordered on pathology and comedy. I especially recall one meek looking young man whom I counseled for refusing induction. As I "read him the riot act," he reached into his pocket and produced the tiniest of penknives, the type that some might use to clean their fingernails. He then opened the knife and hovered the one-inch blade over his left wrist. "I'll do it," he said in a soft voice, "I'll do it!"



Abolition of ROTC units on campus was one of the demands of Harvard student strikers in the spring of 1969: demonstrators ring University Hall, the administration building of Harvard College, which was later occupied by students.

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National Guard tear gas drives back student demonstrators on an Ohio campus during the unrest that followed the Kent State University shootings in the spring of 1970. The Kent State riots touched off a national spate of campus disturbances.

It had been a trying day for me and, under the circumstances, I had difficulty taking this young man seriously. Although I surely might have regretted my actions had the situation evolved differently, I took a large pair of scissors from my desk, slammed them down in front of him, and said, "Here, try these."

With an incredulous look on his face, he stared at me and said slowly, "My God!"

In a few moments, he closed the blade, placed the miniature knife back in his pocket, and sat there in silence as I resumed what I was required by law to say to him. After I finished, I asked if he had any questions. In a most respectful tone of voice, he replied: "No sir." Subsequent to this event, the young man ultimately accepted induction. Whether my actions were instrumental in his decision, I will never know, but I have my suspicions. Sometimes, perhaps, unconventional tactics can be effective indeed.

Of course, I was not the only staff member whose life was affected by AFEES duty. One for whom I developed tremendous respect was, at the time, an Army major—Ranger, Airborne and highly decorated combat soldier while in Vietnam. He served as executive officer at the Los Angeles station during my tour of duty, and in this position he inherited more flak than any other personnel member except, perhaps, the commanding officer.

On a particularly hectic day when everything under the sun seemed to go wrong, the major told me that, in many respects, he would rather be back in Vietnam. "At least," he said with an exhausted sigh, "I usually felt pretty much in control. At the AFEES, even if I think I know what's going to happen next, there's usually nothing I can do about it." Having never served in-country, I cannot say that I know exactly what the major meant, but I suspect that he was absolutely correct in his assessment.

There is a great deal of attention being paid these days to a psychological disturbance called post-traumatic stress disorder, and numerous Vietnam veterans are being diagnosed as suffering from this condition due to their combat experiences. One of the characteristics is lingering guilt, precipitated by nagging questions like, "Why did my buddies get killed while I was spared?" These guilt feelings have been cited as a partial explanation for why many GIs reenlisted and asked to be reassigned to combat duty in Vietnam.

I wonder if some Vietnam-era AFEES personnel may be suffering from some form of PTSD? I know that I feel guilty from time to time about not having served in Vietnam, about being stabilized in a stateside assignment that was relatively "safe," and I have talked to several others who had similar duty and feel the same way. What if I had been in-country? Would I be writing this article today?

Perhaps an even greater gut-wrenching reality that every noncombat-experienced man in my position had to face related to the very nature of the duty we performed. Over the course of my 18-month tour at the AFEES, I participated in the induction of thousands of young men into the Army. Most of them served willingly, but I always had ambivalent feelings about "being the man who put them there," if only symbolically.

Even today, when people with no military experience ask what I did while serving my country, some of them comment: "Oh, you're the guy who sent them to Vietnam."

I have never been able to erase these feelings, and I suspect that I will never succeed. Some have characterized stateside assignments during the Vietnam war as "easy duty," but if my experience is at all representative, I beg to differ.

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The Forward Edge

BY MAJ. GEN. A. S. NEWMAN

Understanding Goes Beyond Mere Facts

One morning during my plebe year at the U.S. Military Academy, after returning to the barracks from a gymnasium period, I found roommate Clarence H. Smith looking in the mirror on our mantel. Good old Smitty was turning his head from side to side, examining his face in careful detail.

"Do you like what you see?" I asked.

"That sucker hit me with his right hand!" he replied.

The final half of our gym period had been boxing instruction, including sparring *with the left hand only.* Seeing Smitty's critical examination of his face, and hearing his announced conviction about an assailant's "right hand," I put these facts together and concluded that Smitty had caught a surprise good one on the kisser in that boxing sparring and had reached his own understanding, based on the way his nose was pointing, that the blow had been delivered with the outlawed right hand.

The principle involved here serves as a basic guideline for any profession, military or civilian: it is not enough to know the facts in any given situation—you must understand the implications derived from those facts. While this illustration may seem strained, it portrays the principle in action.

My second year in the Army, on the rifle range at Ft. Benning, Ga., in 1927, I gained an understanding of how to aim the rifle: that placing the front sight under the bull's-eye was relatively unimportant, unless it was also centered in the rear sight. On the rifle range that year I also experienced another, broader facet to understanding of far greater and more fundamental importance.

I was shooting comfortably at the expert level on arrival at the 300-yard firing line for slow fire—five shots sitting and five kneeling. The sitting shots went off fine. However, on the second kneeling shot I lost my breath before my trigger squeeze activated the firing pin. So I stopped the squeeze, exhaled and began to inhale again—and the rifle fired. Down went the target, then up again with a spotter at the edge, but out of the scoring area. The red flag signaled a miss.

Of course this discombobulated me but was not fatal to my Expert Badge aspirations. On my next shot I was extremely careful and knew it was good, but my target did not go down. However, the target to my right went down and the soldier there complained loudly that he had not fired, which his scorer verified. Then I realized my shot, a nice bull's-eye, was on his target—and so did he and both scorers.

"Hey, lieutenant," the soldier called to me, grinning widely, "I'll shoot on your target!" And the two scorers looked at me too, also with wide grins.

There was nothing for it but to call for a mark on my target, get another red flag and a second miss on the record. When the scores were totaled on the chart behind the firing line later, my total was under Expert by one or two points.

"Lieutenant," my neighbor on the 300-yard firing line said, "you should have let me shoot on your target. I could have gotten at least a deuce."

There was a murmur and more smiles at my miscues, but the tone was sympathetic and amused, not jeering. In fact, I realized in an indefinable way that this seemed to make me more one of them and that there was no adversary relationship between enlisted and commissioned ranks.



This rifle range incident and uncounted other details of shared service in my first years in the Army brought me a certain understanding of how I fit into the scheme of things among soldiers of all ranks. It is expressed this way in an extract from my files:

> No career is more fascinating than that of the professional soldier. Before the end of my tour at [Ft.] Benning any lingering doubt about leaving the Army was gone. I was proud to serve with the fine soldiers I had come to know, to like and to respect. This was the life I wanted.

From peacetime Georgia (1927) to World War II in New Guinea (1944) is a long hop, especially from second lieutenant platoon leader to wartime chief of staff, 24th Infantry Division (Reinforced) on Goodenough Island—actually an amphibious task force scheduled to land in Tanahmerah Bay for the Hollandia invasion. It was my responsibility to coordinate the planning for this operation.

A war-room-type facility was needed so orders were issued to establish one, including selecting a fine young officer to operate it. The primary coordinating and organizing method of control was a layout on the vertical wall surfaces of the operations order, and the supporting administrative order, showing who would prepare each part and where the drafts would be posted on the walls, and by what date each draft would be posted.

Once this system for each draft was completed, it was up to individuals and agencies indicated to get the drafts finished and posted for all concerned to see. But it still remained my responsibility to get it done ultimately. I therefore understood the danger that remained, on which timely completion of the order depended, was this:

Some drafts could not be completed until certain other drafts supplied the necessary planning information. So it was crucial to timely completion of task force orders that the schedule for subordinate parts be met, not only by my staff sections, but by the major units involved—especially the artillery and the three infantry regiments, all of whose commanders were senior to me in age and rank.

On reviewing my understanding of how things get done, I realized one way to avoid such possible delays would be to require each of the major units to pitch a planning tent for a planning staff at task force headquarters near the war room. Further, when any draft from a unit was due on the war-room walls, that unit's planning staff would continue working in their planning tent on the due date until the draft in question was, in fact, posted.

Finally, my understanding enabled me to realize that the task force commander would not be too enthusiastic about approving such a didactic order to his major unit commanders, but he would approve it (and did) for the same reason I was requesting his command backing—that it is better for people to be a little unhappy about how things are done, than to have the resulting overwhelming unhappiness if those things are not done.

Another example of the varied nature of understanding, this time at the five-star level, is detailed in *The General: MacArthur and the Man He Called 'Doc'* (Hippocrene Books Inc.), by his aide de camp (1944–45), Roger O. Egeberg. How an official letter that the then-Maj. Egeberg wrote in New Guinea almost got him court-martialed (yet later was instrumental in bringing him to Gen. Douglas MacArthur's attention) is something that must be read to be believed and understood.

The book also cites the part understanding played in a climactic battle when the great American armada sailed up the west coast of the Philippines, well out to sea and headed for the amphibious landings on the beaches of Lingayen Gulf in northern Luzon. The ships were attacked by Japanese *kamikaze* pilots. With Gen. MacArthur watching the attacks from his command ship, Rear Adm. J. B. Oldendorf's flagship was hit on the bridge, with murderous effect. Other large warships were hit as were some smaller ones. Several of them sunk but the landing proceeded as planned. When this selection of targets for the *kamikazes* became clear, Gen. MacArthur said: "Thank God they're after our men-of-war. Most of them can take a number of hits, but if they attack our troop ships so ferociously, I think we would have to turn back."

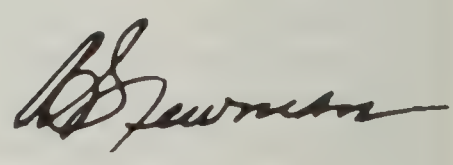
That, it seems to me, is the ultimate illustration of the value of understanding: both the Japanese and American commanders had the same factual knowledge of the nature and type of targets available. Fortunately for the Americans, the Japanese commanders were lacking in the capacity to understand the significance of the vulnerability of the relatively defenseless troop ships. Besides, it was the troops, not the warships, which were the real threat in an amphibious landing.

Two comments:

■ It is a matter of history that the Japanese continued to fail to understand the proper targets for *kamikaze* pilots in the Okinawa Campaign. But the larger question can never be answered: if there had been no atomic bomb, and we had launched an invasion of the Japanese mainland, where thousands of *kamikaze* planes and pilots were waiting, would they have failed to understand, for the third time?

■ Great commanders have always had the irreplaceable attribute of understanding, as Gen. George S. Patton Jr. demonstrated so brilliantly in Africa, Sicily and Europe. But it is not just on battlefields that understanding is vital to success. It applies in every aspect of life and career, so that its potential in things great and small must be recognized and applied to the facts available, even to the direction your nose may be pointing, or in a young lieutenant's decision to make the Army his lifetime career.

So how is your understanding?



Fiscal 1986 Pay and Benefits Outlook Uncertain

With the defense buildup having lost its "untouchable" status during the Administration's current budget deliberations, it is unlikely that all of the military pay and benefits improvements planned by the Department of Defense (DoD) and the services will even make it into the formal fiscal 1986 proposal going to Capitol Hill later this month, let alone survive the legislative process.

Concern about annual federal deficits in the $200 billion range will effectively limit the political options for real growth in defense spending (that is, above the effects of inflation) to a range of zero to five percent. The Administration's goal of cutting annual deficits in half within three years puts particular pressure on the personnel side of the defense budget, since nearly all of those funds are spent in the fiscal year for which they are appropriated, so that any reductions in the rate of growth have an immediate, visible impact on a process that focuses myopically on the upcoming year.

The Bulletin Board

Defense outlays (what will actually be spent, as opposed to the much higher budget authority) were scheduled to rise to a level of about $296 billion in fiscal 1986, but the Administration has been struggling to cut about $10 billion out of that. This puts pay and benefits improvements on a collision course with weapons procurement programs for which more or less fixed levels of spending are mandated by prior-year authorizations, some of them involving multiyear contracts.

After three years of raises held to the four- or five-percent level, DoD had wanted to make a start on bringing military pay back into line with average civilian pay in the general economy. DoD estimates that military pay has fallen about 12 percent below this level of comparability since the last "catch-up" raises of 1981–82 and had proposed a 7.1 percent increase for fiscal 1986 to close the gap a bit. But, while the final figures are unavailable at this writing, it seems unlikely that the Administration will request a raise above the level of overall growth in defense spending.

Aside from basic pay, these are some of the other "quality of life" initiatives that have been discussed by DoD and the services in fiscal 1986 budget preparation:

■ *Realistic reimbursement for the cost of military-ordered moves.* This would involve raising the travel allowance from 15 to 20 cents a mile and establishing entitlement to a temporary lodging expense of up to $110 a day for four days during moves within the continental United States. Such a program is expected to cost more than $200 million a year, but it is likely that some version of it will become reality: it is at the top of DoD's list of improvements, the fundamental unfairness of asking service members to subsidize moves made for the convenience of the government having been recognized for years; further, the circumstances surrounding the suicide of the son of a financially strapped soldier at Ft. Ord, Calif., last year made Congress and the public more aware of the issues involved.

■ *Raising and equalizing overseas household baggage shipment allowances.* The minimum for all ranks would become 10,000 pounds and the maximum would be the 18,000 pounds now allowed federal civilian employees. The present scale ranges from the 225-pound shipment allowed enlisted soldiers with less than two years of service for moves within the continental United States (1,500 pounds for overseas transfers) to 13,500 pounds for colonels and above.

The new minimum would recognize that many more junior enlisted soldiers are married, with more substantial households to move, than was usual in the past, and that these soldiers are least able to bear the extra costs involved. Allowances would also be adjusted within the new scale to accord more with need than rank—as it now stands, the newest unmarried second lieutenant enjoys the same 9,500-pound allowance as the most senior sergeant major.

It is estimated that the higher allowances would cost about $75 million a year, but the matter is related to travel cost reimbursement and has the same priority for DoD.

■ *A group dental insurance plan for the family members of active-duty service members.* This would be financed in part by a small user's fee ($5 or $10 a month has been discussed), with the government paying the balance of the premiums. The plan would pay for all preventive care, 80 percent of minor restorative work, such as fillings, and half of the cost of major procedures, such as crowns and root canals.

The cost of such a program is pegged at around $75 million annually and it is not certain that it will even appear in the DoD fiscal 1986 legislative package. If the plan is proposed, its prospects in Congress are considered uncertain at best, especially since dependents of active-duty soldiers will be eligible for "space available" care in military dental clinics after 1 July, under the fiscal 1985 defense appropriations act (only dependents overseas and those at certain remote stateside posts are now so eligible). Defense officials note, however, that the new eligibility rules will make little practical difference, since there is little excess capacity at military clinics.

■ *Incentives to extend overseas tours of duty.* DoD believes that a relatively small investment here might ultimately yield savings by somewhat reducing the need for expensive overseas moves. Service members stationed overseas in specialties that are undermanned in their areas are now paid an extra $50 a month if they agree to extend their tours by at least a year; DoD would like to increase this bonus to $80 a month. A related proposal would have the government pay for leave travel to and from the United States for the families of soldiers who agreed to serve a second accompanied tour overseas.

■ *Special and incentive pays.* These were proposed last year by DoD's fifth quadrennial review of military compensation and would include: increases in seven types of enlisted hazardous duty pay that would generally place these on a par with the rates now received by commissioned officers; doubling (to $60 a month) of the family separation allowance now paid to soldiers who are ordered away from their families for 30 days or more; and reinstatement of lump-sum payments for selective reenlistment bonuses.

New Enlisted Information Number

Enlisted soldiers seeking assistance on personnel matters are advised by the Army's Military Personnel Center (MILPERCEN) that a new toll-free number is in effect: 1+800-255-9411. The line connects to MILPERCEN's enlisted personnel management directorate.

SCIENCE/SCOPE

The airborne TOW missile system can be carried by many different helicopters for assaulting tanks, bunkers, small boats, ground installations, and other hard targets. The system is carried on the AH-1 Cobra series of the U.S. Army and Marine Corps. It also is installed on the Hughes Helicopters 500 MD, the Italian Agusta A-109, the Bell Helicopter TEXTRON 206L, the United Kingdom's Westland Lynx, the German Messerschmitt-Boelkow-Blohm B0105, and the Sikorsky AUH-76 aircraft. The system incorporates a stabilized sight, which permits the gunner to simply fix his cross hair on the target and fire. The TOW missile is guided automatically to the spot where the gunner is sighting, receiving steering signals through two wires it unreels in flight. The pilot may fly at varying speeds and conduct evasive maneuvers. Hughes Aircraft Company has produced over 1,000 airborne TOW missile systems. TOW missiles have been deployed with the forces of over 30 nations.

Complex microelectronic hybrid circuits will be made in huge quantities in a new missile manufacturing facility at Hughes in Tucson, Arizona. The building covers 71,000 square feet and houses glassed-in production areas. These rooms are so clean that each cubic foot of air contains no more than 100,000 particles 5 microns or larger. (About twice that many particles would fit inside this letter o.) Production equipment is interconnected to a host computer that controls the movement of all work, gathers quality data, and feeds operating instructions to machines. Operators plug into electrical, vacuum, water, and liquid nitrogen systems directly from their work stations. The production rate capability will grow from 800 hybrids a month in the old facility to 40,000 a month by 1987.

U.S. Marine Corps A-4M Skyhawk attack aircraft are as much as three times more effective when equipped with the Angle Rate Bombing Set (ARBS), according to pilots who participated in the first overseas operational deployment of such aircraft. ARBS is a computerized bombing system that can be used with bombs, gunfire, and rockets. Its dual-mode TV and laser tracker locks onto and tracks targets either identified by the pilot on a cockpit display or designated by a laser device. Marine Attack Squadron 311 pilots using ARBS in bombing exercises concentrated bomb hits 50% to 75% closer to targets than did pilots using previous manual techniques. These tests demonstrated how the Hughes-built ARBS can cut the number of missions over enemy territory and improve the A-4M's primary close air support mission of attacking targets located near friendly troops.

A new battlefield air-defense radar is easy to maintain and repair due to advanced electronics and component packaging. The Low Altitude Surveillance Radar (LASR) is designed to help protect front-line troops and armor from hovering helicopters and fast low-flying aircraft. It radiates pencil-thin beams from a rotating antenna to detect threats the moment they pop up on the horizon. LASR is easy to support because of extensive built-in test equipment and automatic fault isolation. Hughes LASR systems are being built for use with Norwegian Hawk antiaircraft missiles.

A long-range air defense radar is easy to maintain and repair, thanks to advanced electronics. The Hughes Air Defense Radar (HADR) is designed to be highly reliable, partly through the use of redundant hardware. Computer-aided fault isolation techniques, built-in test equipment, and modular units all minimize maintenance and personnel requirements. The system also uses solid-state technology with high-reliability parts. The design ensures that components are operated at less than their rated value in order to increase reliability. Based on a similarity to existing hardware, HADR operates a mean time of 500 hours between failures and can be repaired in an average of 45 minutes.

For more information write to: P.O. Box 11205, Dept. 65-2, Marina del Rey, CA 90295

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OPMS Redresses Imbalances In Officers' Selection Process

Review boards will begin sitting this month to determine which of the active Army's reserve commissioned officers should be continued on active duty and how many of those selected might have to be transferred to understrength branches.

The quarterly screening of nonregular line officers for "conditional voluntary indefinite" (CVI) and "voluntary indefinite" (VI) status is the most palpable result of the Army's recent overhaul of its officer personnel management system (OPMS). Other changes made as a result of recommendations from a high-level OPMS study group primarily affect the system and the way it is administered, or have direct individual impact on the careers of relatively few officers.

News Call

Not so with the CVI and VI boards, which will transform what has been essentially a routine administrative process into a sharp tool for redressing an imbalance in the commissioned officer requirements of combat and other branches that has nagged the OPMS since the system was established in the mid-1970s.

The problem is that the combat arms (infantry, air defense and field artillery, armor, combat engineers and aviation) need relatively large numbers of lieutenants, whose opportunities for advancement in those branches then become sharply limited beyond the rank of captain; the combat support and combat service support branches, on the other hand, take in comparatively few junior officers but, together, need more captains and field grade officers than the combat arms.

The mismatch is expected to become more pronounced over the next 20 years, as the combat arms become more weapon-dependent and less manpower-intensive, while support functions become more critical to sustained combat performance. To the extent that the needs of the support branches cannot be met with volunteers, branch transfers will be ordered by the competitive CVI and VI boards, with roughly a third of the total coming each from the top, middle and lower tiers of the order of merit.

Reserve officers wishing to remain on active duty must submit their applications after 2½ years of service, but will compete only against those in their own year group (based on year of entry into the service), thus affording equal consideration among those with three- or four-year initial obligations. CVI candidates are required to state preferences among a list of three understrength branches and can also request a branch transfer at the time of application.

"The system we had up until now was passive," said Lt. Col. Dennis Dalton, chief of the officer personnel management branch at the Army's Military Personnel Center (MILPERCEN). "Extension requests were approved or disapproved on a 'first come, first served' basis, without overall consideration of the Army's needs or comparison of each officer's file with his or her contemporaries."

Those selected are assured the basic right to remain on active duty through the eighth year of service, although CVI status extends the officer's initial obligation by only one year. The one-year probationary period that followed approval under the old system (whence, the "conditional" aspect of CVI) has been abolished. Officers denied continuation on active duty by CVI boards are reassigned to the reserve components when their initial tours are up.

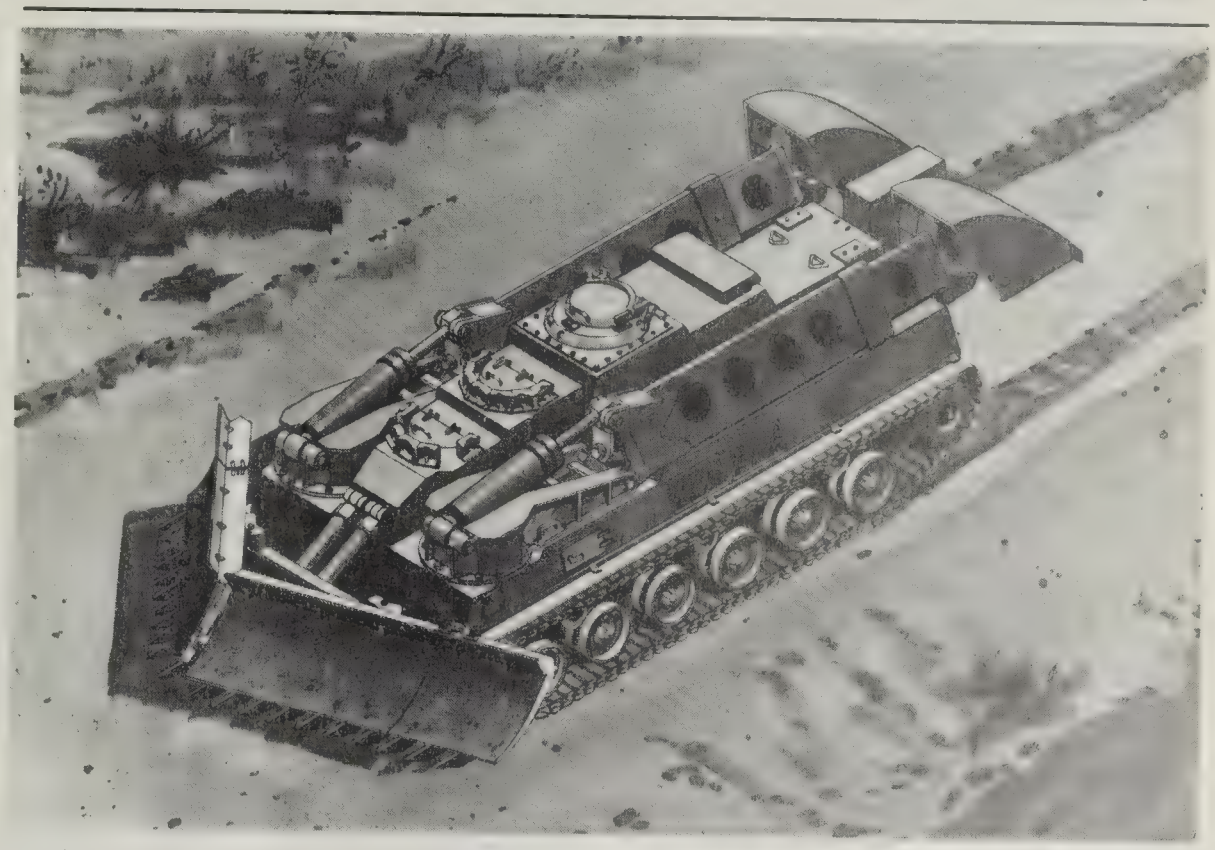
Under the old system, reserve officers who passed the one-year probation were basically eligible to remain on active duty until reaching the mandatory 20-year retirement point or until taken into the regular Army officer corps. Under the revised procedure, these officers face a second hurdle in the form of action by a VI board, between the seventh and eighth year of service.

This second screening, like the earlier CVI phase, has the authority to deny continued VI status or mandate branch transfers. VI consideration is automatic and requires no action on the part of the officer, since the records of all CVI officers are identified in MILPERCEN's officer master file.

The new screening process is generally in line with the provisions of the 1981 defense officer personnel management act (DOPMA), under which reserve officers on active duty are integrated into the regular Army when they are selected for promotion to major's rank.

The OPMS study group also recommended that the Army make liberal use of DOPMA's provision that reserve captains in critical specialties can be retained on active duty up to 20 years of service, even if they have failed promotion to major. Many of these cases occur in the noncombat branches and functional areas.

The other major effect of the study group's recommendations, scores of which were adopted by the Army late last year,



A prototype engineer counterobstacle vehicle (COV), shown here in an artist's conception, is now being built by the BMY Division of Harsco Corp. for six months of concept tests scheduled to begin in July. A joint project of the Army's Belvoir Research and Development Center, Ft. Belvoir, Va., and the Israeli Defense Forces, the COV is based on the proved chassis of the M88A1 armored recovery vehicle, fitted with dual telescoping excavator arms and an experimental front-mounted blade that can be configured as a straight dozer blade or a track-width mine plow. The COV thus combines countermine, earthmoving and excavating operations in a single vehicle. The vehicle will weigh 66–68 tons and features an uprated engine and a suspension lockout for dozing operations.

will be to eventually end the management of officer careers by two or more branches. The circumstance generally affects that roughly one fourth of the officer corps who also have "nonaccession specialties," that is, in a branch other than their primary one. In fact, the term "nonaccession specialty" is now obsolete, along with such other confusing terms of the old system, such as "initial specialty," "accession specialty," "additional specialty," "specialty skill identifier" and "additional skill identifier."

The officer classification system is being recodified and simplified, so that extra-branch specialties are now grouped into "functional areas" (the equivalent of the old nonaccession specialty), while different specialties within branches are now "areas of concentration" (formerly "specialty skill identifiers") and "additional skill identifiers" are now simply "skills" that do not require repeat assignments, such as language training or Ranger or airborne qualification.

The 14 functional areas are not related to any branch, but for the practical purposes of career management they will operate like branches; the main difference is that new officers can only enter the Army through branches.

Two new functional areas have been created: combat development (code 99) and force development (code 50), the latter broken out of operations, plans and training (54). The other functional areas are: special operations (code 18); personnel management (41); comptroller (45); public affairs (46); U.S. Military Academy permanent professor (47); foreign area officer (48); operations research and systems analysis (49); research and development (51); nuclear weapons (52); systems automation officer (53); and procurement (97).

Typically, officers with specialties in one of the functional areas will alternate assignments between that field and their branch, although a smaller number will move into a functional area and remain there. About 15 percent of all officers —mainly in the combat arms—will be "single tracked," that is, they will have a career-long pattern of branch assignments.

In branches where multiple specialties exist (as is the case with all but two), these have been somewhat consolidated. Branch "general" categories have also been created in those branches where they did not exist (signal, military intelligence, adjutant general and transportation corps), to identify positions that can be filled by any branch-qualified officer.

Other positions now simply call for any officer ("branch immaterial"), such as ROTC instructor, which used to require infantry officers. Still other jobs require only any combat arms officer or any officer from one of the logistics-oriented branches (ordnance, quartermaster or transportation corps).

Another important aspect of the recent OPMS reform allows only ten percent of officers competitively selected for command to be picked from among those eligible for the first time. The OPMS study group found that the centralized command selection boards tend to favor these younger officers, whose qualifications are necessarily high, to the detriment of those whose age–achievement ratio looks more ordinary.

The Army believes the ten-percent cap will eventually produce more mature commanders, while still leaving room to encourage truly exceptional officers.

GENERAL OFFICER CHANGES

Brigadier Generals: **C.C. Adsit** from PM, DIVAD, PA, to ADPP, DLA; **W.S. Carpenter Jr.** from HD, OCSA, to CG, 10th Inf. Div.; **J.S. Crow** from Ch., FARMCSTF, USAARMC, to DDO, NMCC, J3, OJCS; **W.H. Harrison** from ADC, 2nd Inf. Div., to CG, 7th Inf. Div.; **H.D. Penzler** from CofS, III Corps & FH, to DCof SD, TRADOC; **A.B. Salisbury** from DSPTF, ALSAS, ODCSOPS, to CG, USAISSSC.

■ ***PA**—Picatinny Arsenal, Dover, N.J.; **ADPP**—Assistant Director for Policy and Plans; **HD**—Holding Detachment; **FARMCSTF**—Future Armored Combat Systems Task Force; **FH**—Ft. Hood, Tex.; **DSPTF, ALSAS**—Director, Special Task Force, All Source Analysis System; **USAISSSC**—U.S. Army Information Systems Software Support Command.*

Lapel Button for Ex-Soldiers. The Army has revived the issue of a little-known decoration, the Army Lapel Button, as a means of recognizing the exemplary service of selected ex-soldiers who are not retirees.

The $^{9}/_{16}$ inch-diameter pin shows a gold-colored minuteman figure on a circular red-enameled field, surrounded by 16 gold pointed rays, and is only authorized for wear on civilian clothes.

It has been in the regulations since shortly after World War II, and was originally available to anyone who completed a year (changed to nine months in the early 1970s) of honorable Army federal service after 31 December, 1946, the date eligibility ended for the World War II Honorable Service Lapel Button (the "Ruptured Duck" of former legend).

However, the decoration was not widely circulated, since the service issued it to departing soldiers only during the brief all-volunteer recruiting experiment of 1947–48. After 1948, the regulations indicated that the lapel button was not sold or issued by the Army, so the great mass of nonregular veterans who have served since that time was largely unaware of its existence, as was the general public.

That state of unawareness is precisely what the Army is now trying to rectify in reviving the decoration and placing its issue on a more exclusive basis. Effective 1 January, the regulations were revised to include only service performed after 1 April, 1984, which relieves the Army of dealing with retroactive claims.

Awardees will be selected by unit commanders on a merit basis, so it will not be available to everyone who would have been eligible under the old regulation. In order to preserve this degree of exclusivity, the revised rules prohibit the private manufacture or sale of the button.

The idea of the revival, according to spokesmen for the Office of the Adjutant General, is to provide a focus for formal recognition of exemplary service that will carry over into the civilian community, where the Army considers satisfied veterans to be among its best recruiting advertisements. The Army anticipates that awards will be made at ceremonial formations for departing soldiers "to ensure chain-of-command recognition . . . in a setting when [the soldier] is surrounded by his peers."

The new regulations make the Army Lapel Button the near-equivalent of the issued civilian-wear lapel pin for the Good Conduct Medal. It may shortly become an exact equivalent, since the regulations for award of the Good Conduct Medal are now under formal study with an eye to tightening up eligibility.

Winter 'Reforger' Exercises. For the first time since 1979, this year's "Reforger" exercises testing emergency deployment to Europe will be held in winter conditions; the first U.S.-based troops leave this month for NATO maneuvers that will extend into February.

Major Army units involved in "Reforger 85" are the 24th Infantry Division (Mechanized), from Ft. Stewart, Ga.; the 1st Battalion (Ranger), 75th Infantry, from nearby Hunter Army Airfield; and the 197th Infantry Brigade, Ft. Benning, Ga. Also scheduled to take part are 12 combat support and combat service support units from the active Army and 35 Army Reserve and Army National Guard units.

Altogether, 18,700 Army troops will take part in the exercise, and 300,000 tons of equipment will be moved across the Atlantic. Some troops and equipment will be transported to Amsterdam on three ships, including the U.S.S. *Antares*, one of the Navy's new fast sealift vessels.

The last wintertime "Reforger" exercise in 1979 found the ensuing maneuvers with allied forces cut short, not by severe weather but an unexpected thaw. Farmers' fields turned to mud and the exercise was halted to limit damage by vehicles. After a winter exercise, "Reforger" usually returns to the normal autumn schedule, so another such exercise will probably not be held until the fall of 1986.

Improved Bradleys Under Test. Improved versions of the Bradley infantry and cavalry fighting vehicles, designated M2E1 and M3E1, respectively, are now being vetted by the Army's Test and Evaluation Command at Aberdeen Proving Ground, Md.

Although many major and minor changes are represented in the prototypes, perhaps the most important and visible is the modification of the antitank missile launching tubes and associated fire control gear to accommodate all marks of the TOW (antitank) missile, including the full-diameter TOW 2.

This is deemed highly critical, since the TOW 2 with its six-inch warhead is the Army's response to unanticipated Soviet armor improvements and is believed to be the only antitank missile in the service's inventory with any hope of consistent performance against the frontal arrays of the newest Soviet main battle tanks.

In this connection, the Army is considering single missile launch tubes of new design, mounted on either side of the turret. These may replace the dual-tube armored box hinged to the left side of the turret in standard vehicles, but a final decision had not been made at this writing—a choice must be made before any experimental TOW firings in the current test cycle.

The standard riveted launcher box has the tubes canted slightly to allow the tracker sight to pick up the missile quickly. Subsequent tests have shown that this feature may not be necessary and the experimental single tubes, which are cast assemblies rather than riveted, are not canted.

The second major modification is an antigas particulate filter system with different configurations for the infantry and cavalry scout versions of the vehicle. In the M2E1, only the driver, commander and gunner are hooked up to the vehicle system through face pieces and hoses; the six infantrymen in the rear compartment have filtering units built into their chemical-biological protective suits. This allows the infantry complement to leave the vehicle at any time; the Army considers the arrangement superior to the overpressure system used in Soviet infantry fighting vehicles, which requires the infantrymen to change to protective gear every time they need to leave the vehicle when chemical agents are present. In the M3E1 cavalry vehicle, all five crewmen are connected to the vehicle filter system.

Several other changes now under test are common to both types of Bradley: an indicator showing when turret power is on, simplified stowage strapping, padding for the driver's station, redesigned weapons interlock and top deck clearance arrangements, new on-board rations, two camouflage nets and replacement of the ten-gallon water tank with two five-gallon units.

Minor modifications include: addition of an oil-sampling valve; improved protection for cables in the turret; an improved system for charging the turret battery; limiting of electrical current flow for the master relay; a change in the driver's hatch latch; suspension improvements, including a hull stiffener; addition of a fuel pump circuit separator and a barrel release mechanism for the 25-mm main gun; and deletion of the hull gyroscope and battery liquid sensor.

In the M2E1, the AN/TAS-5 night sight for the Dragon antitank missile is now carried (up to five Dragons can be substituted for the stowed TOWs) and mine and flare stowage has been rearranged to permit the carriage of more mines while reducing the number of flares.





These prototypes of the M2E1 Bradley infantry fighting vehicle (right) *and M3E1 cavalry scout vehicle* (below) *are now at Aberdeen Proving Ground, Md., for tests of extensive modifications. Visible on the M3E1 are the blanked-out gun ports* (center) *and vision blocks and the four new vision blocks in the rear deck hatch cover.*

Changes peculiar to the M3E1 are more extensive, the most visible being the elimination of the vestigial gun ports (intended for the 5.56-mm firing port weapons operated by the M2's infantry squad) and their replacement by solid armor; the associated vision blocks that permitted the two reconnaissance crewmen to observe the terrain while under cover have been replaced by four periscopes in the missile loading hatch cover. The seats for the two scouts have been relocated under the hatch and provided with a mechanism to raise and lower them.

Not all of the modifications may be deemed necessary after the current tests, but the eventual production vehicles embodying them will be redesignated M2A1 and M3A1.

THE ARMY

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Ambassador Komer for the Defense—Conventional, That Is

A Formidable Adversary Takes on Sea Emphasis

Maritime Strategy or Coalition Defense?
Robert W. Komer. ABT Books, 55 Wheeler St., Cambridge, Mass. 02138. 116 pages; notes; index; $19.

By Col. Stanley L. Falk
U.S. Army Reserve, retired

In the face of the continuing Soviet–American nuclear standoff, what strategic policies and postures should the United States adopt to ensure survival and success in a dangerous and unstable global environment?

Books

That is the question addressed by Robert W. Komer, former defense policymaker, ambassador and Vietnam pacification chief. His solution, neatly packaged in this small, closely reasoned volume, will certainly please opponents of the "maritime strategy" school of thought. It will also encourage those urging a more efficient grouping of alliance resources than is now evident under NATO and other defense pacts.

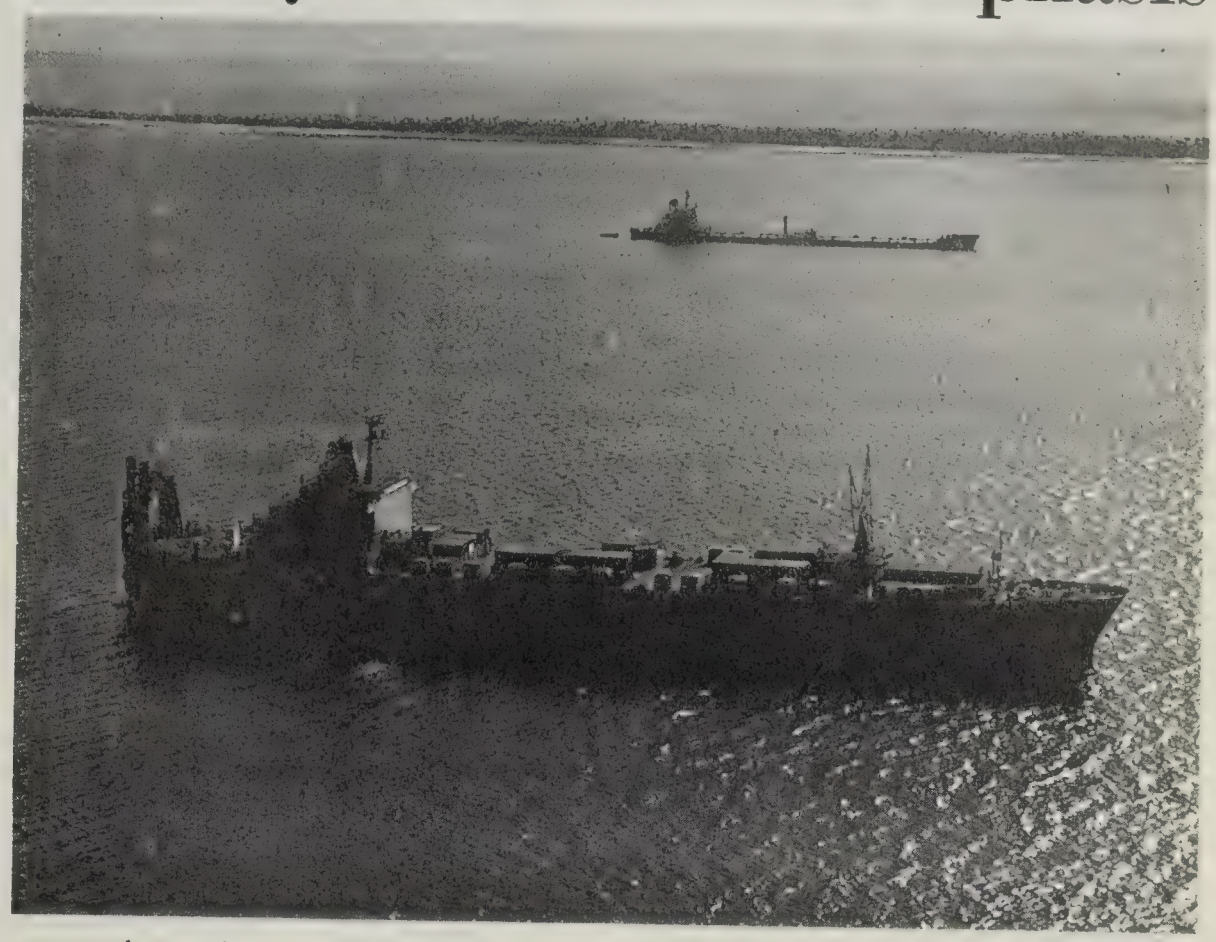
Ambassador Komer starts with the assumption that, while nuclear deterrence is essential for survival, nonnuclear deterrence and conventional defense require far more attention than they have received in recent years. He is also critical of what he calls America's growing "global unilateralism," which ignores the strength and interdependence of the free world and tries to meet alone a broad range of concurrent strategic requirements.

Finally, he deplores the continued emphasis on service preferences, roles and missions to the detriment of a coherent overall strategy based on a sound assessment of needs and resources.

His primary concern is what he sees as a costly overemphasis on building a powerful new Navy, specifically the construction of 15 carrier battle groups at the expense of other, more efficient means of conventional defense.

Mr. Komer has no argument with the need for strong naval forces, but he points out that, in a period of limited resources, the emphasis on large new carriers and amphibious assault forces prevents the fulfillment of legitimate Army and Air Force requirements.

The new American naval priorities also include a basic shift from the strategy of sea control to one of force projection into remote and dangerous waters. This,



argues the author convincingly, is not only more expensive, but is also of questionable effectiveness against a Soviet Union capable of dominating the Eurasian landmass with ground and air power.

Neither the destruction of Soviet fleets and naval bases nor carrier strikes against the edges of the Soviet empire could prevent the loss of Europe and the Middle East to aggressive Russian armies. Furthermore, the Navy's concentration on offensive force projection is in itself shifting funds from still important sea-control programs.

Rather than pursuing a dangerous and impractical unilateralism based on maritime supremacy, argues the author, the United States must seek closer cooperation with our rich allies to use joint resources more efficiently and rationally. To this end, he suggests a number of worthwhile measures to ensure the successful allied defense of Europe, the oil regions of the Middle East and northeast Asia.

First, the allies must realize that "the declining credibility of nuclear deterrence dictates greater reliance on conventional deterrence/defense"and that this will cost more money, more efficiently spent. It should then be possible to build and structure NATO ground and air forces of sufficient strength to thwart any sudden *blitzkrieg* by the Warsaw Pact. Rapid reinforcement capabilities, a better European logistical base and advances in nonnuclear technology would counter Soviet follow-on attacks.

To ensure allied success, French forces, bases and lines of communication would be expected to play a much greater role than is now conceived. Such a commitment would clearly require a shift of French resources from the independent nuclear force to the conventional side of the budget.

For Persian Gulf defense, the author sees the only solution in increased U.S. rapid deployment capabilities, supported by a greater availability of bases and prepositioned equipment. This would require force diversions from Europe and the Pacific, which would have to be balanced by enhanced defense capabilities among our European and Asian allies.

In like manner, Soviet aggression in the Far East can best be deterred by increased conventional defenses in Japan, China and Korea. Such added strength would also serve to tie down major Soviet forces, should the Soviets attempt to launch operations in Europe or the Middle East.

Ambassador Komer's arguments, as always, are forceful and cogent. He has written an important book that articulates basic criticisms of current American defense policy. Not all of his points will be readily accepted, but they deserve serious consideration.

COL. STANLEY L. FALK, U.S. Army Reserve, retired, Ph.D., is the author of several books on World War II, the best known of which is Bataan: The March of Death.

A Monastery and Allied Fears

A Priceless Casualty of World War II's Fury

Monte Cassino. *David Hapgood and David Richardson. Congdon & Weed, 298 Fifth Ave., New York, N.Y. 10001. 269 pages; photographs; notes and sources; bibliography; index; $17.95.*

By Col. Ernest F. Fisher Jr.
AUS, retired

Precisely at 0928 on 15 February, 1944, the first bomber of a flight of 38 B-17s of the U.S. Mediterranean Air Command dropped its cargo of 12 500-pound bombs. Following the first wave, 108 B-17s mounted an attack that lasted until 1115, after which a dust-shrouded silence descended over the target.

At 1332, 86 B-26s appeared over the target in an attack that lasted until 1350 when the last of the bombers flew south to their bases near Foggia, Italy. During these four hours, 239 heavy and medium bombers in eight attacks had dropped a total of 453.5 tons of bombs, 66.5 tons of which were incendiaries.

The target of this destructive fury was Monte Cassino, the mother abbey of the monastic order of St. Benedict. In 529 A.D., he had chosen this hilltop location some 70 miles southeast of Rome as the site of his monastery. It was to become during the early Middle Ages the largest and most important monastery in Western Europe and one of its great seats of learning. Its archive was acknowledged a priceless treasure.

As the sun set on that fateful day in 1944, the ancient monument lay a smoking ruin, the victim of a series of events that unfolded with the relentless momentum of a Greek tragedy.

The triumph of *Monte Cassino* lies in the skill with which the authors retell these events and weave them into a dramatic whole that embodies the dilemma of war in the modern era—how to fight to preserve civilization's rich heritage without destroying that heritage.

The abbey of Monte Cassino emerges in this tale at the center of this dilemma. Its baleful presence became an obsession to Allied soldiers fighting and dying on its slopes. They had convinced themselves, and others it appears, that the great building harbored an enemy responsible for their misery and therefore had to be destroyed. The Allied press soon shared this perception and helped to create widespread public outcry for Monte Cassino's destruction to spare the lives of Allied soldiers.

Ironically, neither Gen. Mark W. Clark, the U.S. Army commander in Italy, nor Gen. Geoffrey Keyes, the corps commander in whose sector the abbey lay, believed that it harbored German troops. Both men saw no advantage to destroying the abbey and wished to spare it. Gen. von Senger und Etterlin, Gen. Keyes's counterpart on the German side, had placed the abbey strictly off limits to his men and shared his adversaries' desire to spare the building.

Nevertheless, two officers of the Hermann Goering Division, sensing the monument's inevitable fate, took steps to evacuate its treasures to safety. Herein lies a tale worth the price of the book—the story of how these two officers, acting from widely differing motives, helped spare the abbey's priceless treasures but not the building itself.

As they had feared, and as Allied soldiers had desired, Monte Cassino fell. The ultimate irony of this tragedy is that no enemy soldiers died in the bombing because none were there. None of the few monks in the abbey were injured—they had taken refuge deep inside the massive structure—but about half of the approximately 230 civilian refugees who had sought shelter there were killed.

When Monte Cassino finally fell to the Allies about four months later, the Germans, who had occupied the ruins and defended them against repeated efforts to reach them, had slipped away, leaving only a few badly wounded men in the care of medical orderlies. All that remained standing was the monastery's gate with the word *pax* inscribed in the stone.

Human reason and compassion had been ground to bits by the demands of military necessity. The victors and the vanquished were the ultimate losers.



The symbol of Allied frustrations during the 1943–44 campaign in Italy, the controversial bombing of the Abbey of Monte Cassino was followed by a massive aerial attack on the town of Cassino (above), *15 March, 1944; the ensuing Allied offensive fizzled.*

COL. ERNEST F. FISHER JR., AUS, retired, is an historian at the Army's Center of Military History in Washington, D.C.

Defense Reorganization

System's Problems Examined in Study

Reappraising Defense Organization. *Archie D. Barrett. Introduction by Gen. David C. Jones. National Defense University Press, Ft. Leslie J. McNair, Washington, D.C. 20319. 312 pages; glossary; index; $6.00.*

By Robert W. Coakley

In fulfillment of a campaign pledge to reorganize the federal bureaucracy, President Jimmy Carter in September 1977, initiated a searching review of Department of Defense (DoD) organization. The result was a series of studies identified as the Defense Organizational Study of 1977–80 (DOS 77–80) conducted by five different study groups.

The author of this book calls DOS 77–80 "the most comprehensive examination of the Department of Defense in a decade," and one that constitutes "*in toto*, a severe indictment."

Unfortunately, the various studies were never integrated into a single report with recommendations, as the Carter Admin-

istration lost its zeal for administrative reform.

In this volume, the author, a retired Air Force colonel working for the House Armed Services Committee and a participant in the studies, presents the main points of the DOS 77-80 studies along with those of other reorganization studies of the more recent past. From them he draws a prescription for defense reorganization he believes is politically feasible.

The National Security Act Amendments of 1958 established a dual chain of command—what Col. Barrett calls the "employing arm" running from the President through the secretary of defense and the Joint Chiefs of Staff (JCS) to the unified commands and the "maintaining arm" flowing from the same civilian sources through the military departments to the various elements of their services.

What are the defects in this system? DOS 77-80 found them to lie primarily in the continuing, overwhelming influence of the four separate services, an influence that makes it impossible for the joint organizations (the JCS and the unified commands) to function as anything more than alliances of separate services.

The individual members of the Joint Chiefs are the prisoners of their departmental military staffs and their decisions all too frequently represent mere adjustments of four different service viewpoints.

As a service to readers interested in obtaining books reviewed in *ARMY*, the mailing address of the publisher is included in the head notes for each main review and Varied Fare item. Readers are reminded that neither *ARMY* nor AUSA has the facilities to order books for them or to handle the related correspondence; inquiries and orders must be directed to the publisher.

The Editors

The President and the secretary of defense are therefore deprived of genuine joint advice. The Joint Staff serving the chiefs is composed of officers more responsive to their services, on whom their advancement depends, than to joint interests.

The chain of command to the employing arm is complicated, confused and crisscrosses the chain for the maintaining arm.

Component commands rather than the unified commands are responsible for readiness of forces and shape the requirements for their areas, operating through the service channels of the maintaining arm.

The service secretaries, who have statutory responsibility for that arm "do not possess the organizational wherewithal either to lead their departments effectively or to participate significantly in top management of the Department of Defense." They form then an intermediate level of management of minimum utility.

At the apex, the secretary of defense does have sufficient power and he uses it—but too frequently, the author says, in controlling administrative detail and too little in defining the linkages between national objectives and military policy, and seeing to the execution of that policy once decided on.

He concludes that the dominant organizations in the Department of Defense, regardless of the theoretical chains of command, are the central management (secretary of defense and his office) and the services: "The relationship between secretary/OSD and the services is the anvil on which the major decisions concerning both maintaining and employing functions are hammered out in DoD."

What are the remedies? Col. Barrett rejects drastic measures recommended frequently by study groups and opts for limited and "politically feasible" reforms. The secretary of defense should redirect his attention toward higher level administration, particularly toward evaluating and redesigning the allocation of decisions among the constituent elements of his department. He should impose both a "decentralizing bias and a centralizing imperative," depending on the nature of the activity involved.

The author thinks the service secretaries should be made the true heads of their departments, with their existing secretariats combined with the military headquarters staff in each department in a single entity responsible directly to the departmental secretary. The role of the chairman of the Joint Chiefs would be strengthened by making him "an independent source of military advice to the secretary of defense" and the "single military superior" of the commanders of the unified commands, their spokesman at the seat of government.

He would remain as head of the JCS but would be given a dedicated staff, separate from the Joint Staff, to support him. The independence of the Joint Staff would be increased by terminating procedures requiring service coordination of JCS papers and by revising personnel procedures to assure assignment of the best officers to the Joint Staff.

The commanders of unified commands would be assigned a coordinate role with the component commanders in a revised readiness evaluation system and given a greater role in requirements determination. Responsibility for joint training and doctrine would go to the Army's Readiness Command.



"You can bet your pin feathers he isn't just flying south for the winter."

A ten-fold increase in hit probability for a fraction of the cost of an additional Vulcan.

Even under ideal circumstances, the Vulcan gunner faces difficult odds. Tests show that his chances of hitting an attacking aircraft are very low.

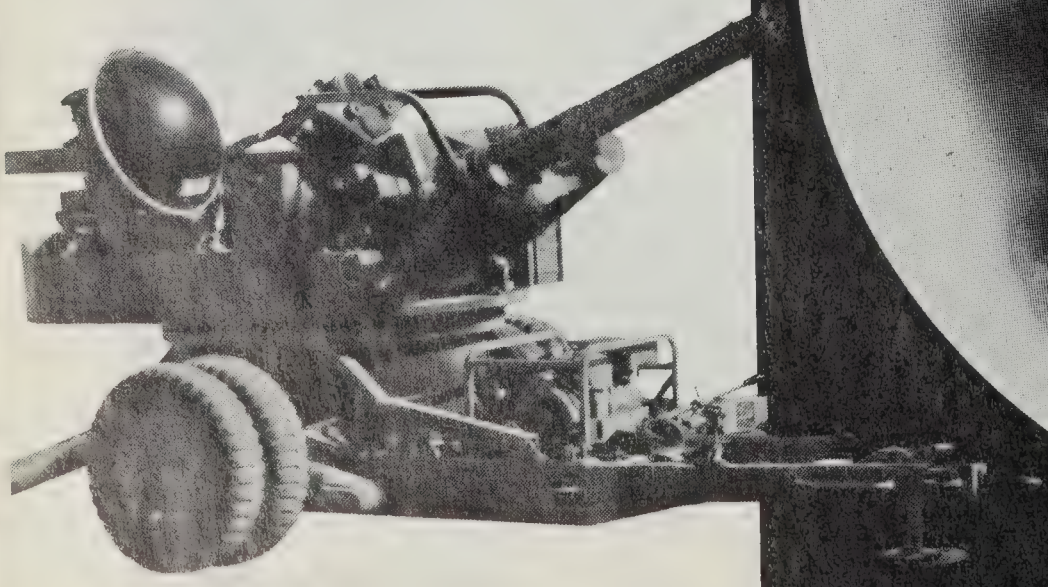
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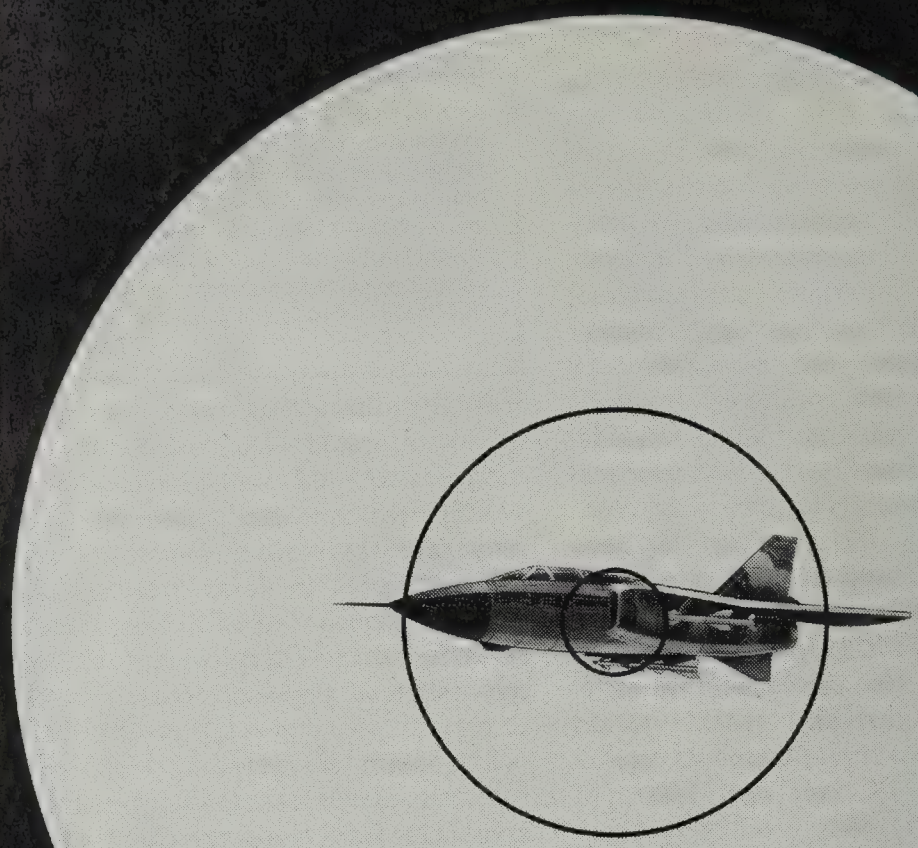
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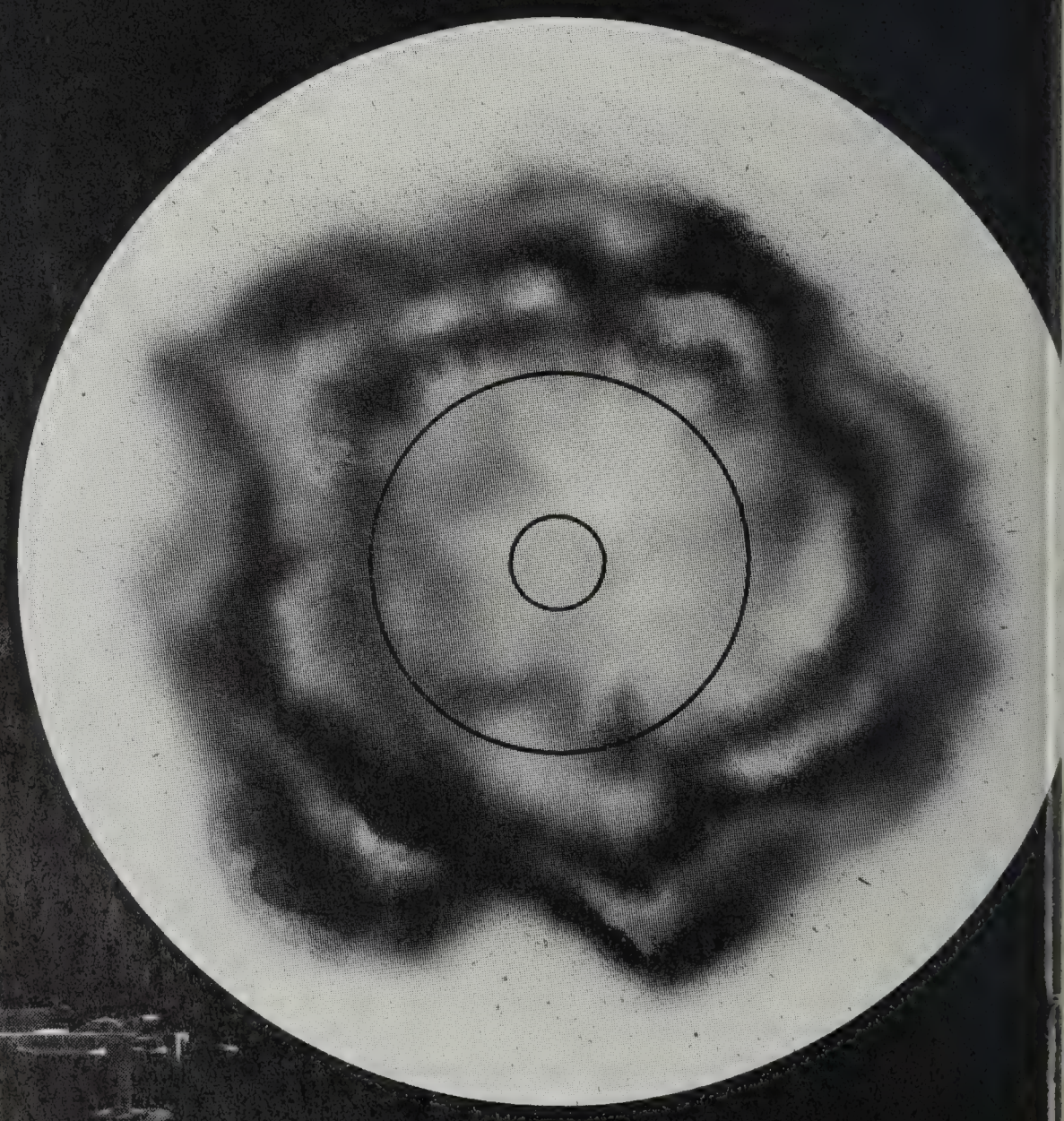
These improvements add up to more accurate and more effective target tracking at all crossing ranges. And they greatly reduce the time it takes to train gunners.

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Lockheed Electronics
Plainfield, New Jersey







While the author has labored diligently to make both his criticisms and his proposals intelligible to the reader, and to show how his system would work in practice, there is still much that remains shrouded in the mysteries of organizational jargon. This is not an easy book to read, but it is an impressive one that addresses the fundamental problems of defense organization. It does not seem destined, however, to exert much influence in an era where defense expansion, not reorganization for greater efficiency, is the order of the day.

ROBERT W. COAKLEY, Ph.D., coauthored the global logistics and strategy volume in the series, U.S. Army in World War II, and is currently at work on a study of the use of federal military force in domestic disorders.

Picture Out of Date

Survey of the Military Offers Little Insight

The Boys in the Barracks: Observations on American Military Life. *Larry H. Ingraham. Institute for the Study of Human Issues, 3401 Market St., Philadelphia, Pa. 19104. 254 pages; photographs; references; epilogue; $17.50.*

By Maj. Roger Cirillo

This is sociology that is both dated and confusing. The author's observations pertain not to military life, but to drug and alcohol abuse after duty hours. His army is antiestablishment; its leaders operate in a "live-and-let-live" system and, with one exception, are uncaring and negligent in basic leadership. Cohesion comes not from pride in unit or accomplishment, but in a shared experience of drug or alcohol use.

The picture is faded and out of date. The observations stem from early 1970s' studies, not current ones. No army that is rotting internally can survive in combat, a lesson repeated numerous times in defeats from ancient Rome to modern France. Eliminating such ills is a necessity, regardless of whether or not the ills reflect the society that the army represents.

A frightening snapshot of what was, the book offers at best some insight into but no definitive picture of today's "boys" and "girls" in the barracks.

MAJ. ROGER CIRILLO, a former armored cavalry troop commander, is an instructor at the U.S. Army Command and General Staff College, Ft. Leavenworth, Kan.

Varied Fare

Petain: Hero or Traitor. *Herbert R. Lottman. William Morrow & Co., Inc., 105 Madison Ave., New York, N.Y. 10016. 444 pages; notes; index; $17.95.*

A biography of the controversial military figure who saved France at Verdun in World War I and ruled France during the German occupation of World War II. The author writes in his foreword: "What had at first seemed a linear story, the gradual transformation of a hero into a traitor, turned out to be far more complex . . . the same person might be a resistance fighter with respect to the Axis powers *and* the founder of a dictatorship that borrowed much of its techniques and philosophy from the very Nazi and Fascist regimes he wished to resist."

On Freedom: Essays from the Frankfurt Conference. *John A. Howard, ed. Foreword by Robert A. Nisbet. Devin-Adair, 6 North Water St., Greenwich, Conn. 06830. 161 pages; index; $12.95.*

Nine essays presented at *Frankfurt am Main* in November 1982, at a conference sponsored by the Rockford Institute of Rockford, Ill., and the National Strategy Information Center of New York City provide eloquent and thoughtful testament to the role of freedom in modern civilization. As the foreword states, the collection offers "philosophic insight, historical comprehension and unswervable devotion to democratic freedom." Melvin J. Lasky's piece on "The Russian Question" is alone worth the price of admission.



Tax Guide and Portfolio for Military Personnel. *Maj. Walter B. Lincoln, Avery Publishing, 89 Baldwin Terrace, Wayne, N.J. 07470. 126 pages; $6.95*

A filing and record-keeping system to assist military members in minimizing their legal tax liability.

Black Brass, Black Generals and Admirals in the Armed Forces of the United States. *Henry E. Dabbs. Introduction by Vice Adm. Samuel Lee Gravely Jr., U.S. Navy, retired. Afro-American Heritage House, 200 Craig Rd., Freehold, N.J. 07728. 228 pages; illustrations; photographs; bibliography; index; $12.95.*

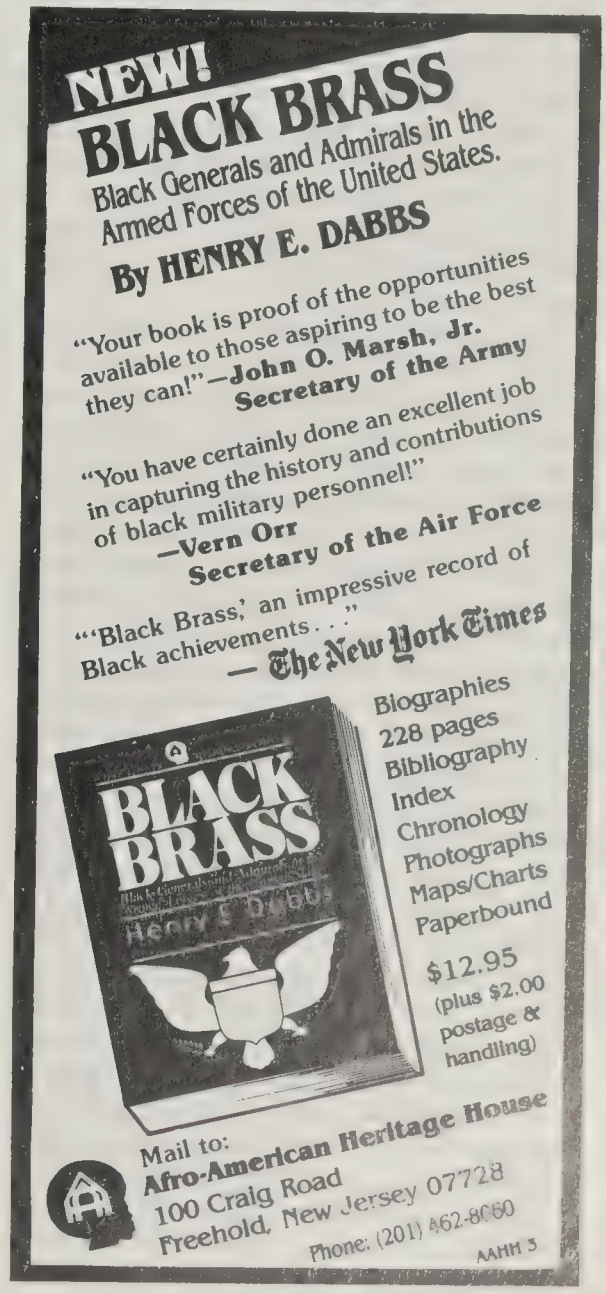
Black Brass is a compilation of the biographies of every black general officer in the history of the U.S. Armed Forces. The author hopes his work will become "the standard reference work in this subject area," and well it might. His sketches of contemporary black officers are complemented by a succinct early history of the "black commander tradition," starting with Hannibal. An interesting chronology of the "major events in black military history, 1492–1983" and a section on black Medal of Honor winners add to the value of this important and innovative reference work. The reader's only regret may be that the volume is not larger.

One for All: NATO Strategy and Logistics through the Formative Period (1949–1969). *James A. Huston. University of Delaware Press, 440 Forsgate Dr., Cranbury, N.J. 08512. 332 pages; illustrations; notes; index; $38.50.*

A thorough examination of how the logistic support programs of NATO evolved through the first 20 years of the alliance in concert with changing strategic perceptions and assumptions. Common infrastructure, shared financing, communications, pipelines, air and naval facilities are some of the subjects treated.

Wars and Rumours of Wars: a Memoir. *James Marshall-Cornwall. Secker and Warburg, distributed by David and Charles Inc., North Pomfret, Vt. 05053. 257 pages; illustrations; notes; index; no price listed.*

Gen. Sir James Marshall-Cornwall, born in 1887, commissioned in the Royal Artillery in 1907, participated in World Wars I and II. He was highly decorated and met many prominent people in his travels around the world. Since his retirement he has written military history. His recollections here are charming and perceptive.



AUSA in Action

Bernstein, Clark and Bainbridge Are Named as Council Nominees



R. Bernstein



M. E. Clark



W. G. Bainbridge

Maj. Gen. Robert Bernstein, USA, Ret., and Maj. Gen. Mary E. Clark, USA, Ret., have been proposed by the 1984 AUSA Nominating Committee to serve three-year terms as members of the Association's Council of Trustees. In addition, SMA William G. Bainbridge, USA, Ret., has been nominated to serve his second full three-year term. SMA Bainbridge was first appointed to the Council in 1981 to fill an unexpired term of a former Trustee. The terms of the three nominees would begin on 1 July, 1985.

As in previous years, the Nominating Committee made its selections after carefully considering proposals submitted by AUSA members, chapters, regions, the Advisory Board of Directors and the Council of Trustees.

Maj. Gen. Robert Bernstein, USA, Ret., retired from the Army in 1978 as the commander of Walter Reed Army Medical Center and is now commissioner of the Texas Department of Health in Austin, Tex. He is a graduate of Vanderbilt University and earned his medical degree from the University of Louisville.

Gen. Bernstein, during his military career, served in medical assignments in the United States, Europe, Korea, the Canal Zone and Vietnam. He also served as commander, U.S. Army Medical Research and Development Command, and assistant surgeon general for research and development. He is a graduate of the Medical Field Service School, Airborne School, the amphibious training medical course, military medicine and allied science course, Command and General Staff College and the U.S. Army War College. Gen. Bernstein is a member of the Texas Capital Chapter.

Maj. Gen. Mary E. Clarke, USA, Ret., began her Army career as an enlisted woman and rose through the ranks to become the first woman to command a major military installation when she was assigned to command the then U.S. Army Military Police School/Training Center and Ft. McClellan, Ala. Gen. Clark was also the director of the Women's Army Corps, until it was disestablished, and director of the Human Resources Development Office, Deputy Chief of Staff for Personnel, Department of the Army.

She is the recipient of an honorary degree of doctor of military science from Norwich University and the Toastmasters International Communications and Leadership award. Gen. Clark is also a member of the board of directors of the United Services Automobile Association and the Defense Advisory Committee on Women in the Services.

She resides in Jacksonville, Ala., and is a member of AUSA's Gallant Pelham Chapter.

SMA William G. Bainbridge, USA, Ret., served as sergeant major of the Army from July 1975 to July 1979. SMA Bainbridge is currently the secretary of the board of commissioners of the Soldiers' and Airmen's Home in Washington, D.C.

Before his service on the council, he was a member of the Association's Advisory Board of Directors. During his military career, SMA Bainbridge served in Europe and Vietnam, where he was sergeant major of the 1st Battalion, 28th Infantry. He was also command sergeant major at Ft. Benning, Ga., First U.S. Army, U.S. Army Pacific, and the then newly created Sergeants Major Academy at Ft. Bliss, Tex. SMA Bainbridge, as a member of the Council of Trustees, has served as the Council's member on the Advisory Board of Director's Retiree Affairs Committee. He is a member of the Association's George Washington Chapter.

If members wish to make other nominations, the bylaws require that national headquarters receive a petition for candidacy supported by at least 250 signatures of *bona fide* members of AUSA, with at least 40 signatures from each of four chapters. Nominations must be received at national headquarters by 15 February, 1985.

If additional nominations are received, the slate will be submitted to the voting membership by printed ballot distributed in ARMY magazine. If no contest ensues, the nominees selected by the Nominating Committee will be installed at the June Council of Trustees' meeting.

Members of the Nominating Committee include Alfred G. Cinelli, chairman, and Gen. William E. DePuy, USA, Ret., and Leonard M. Horner, members.

Korea Chapter Hosts Games

'Olympics' Draw Tough Competitors

Athletes from all over South Korea gathered at Camp Walker as the 19th Support Command District Subchapter hosted its first annual "Olympics." The mood was festive and spirits were high as spectators urged their teams on.

The day's first event was a four-mile run. The premier long-distance runner emerged immediately as 21-year-old Randall Belltrain, a member of the 2nd Quartermaster Group, outdistanced the field to capture first place with a time of 25:19.

The golf course performance of 64-year-old Frank Okusako, of the Materiel Support Center–Korea, was perfect. He was competing in the closest drive to the pin on a makeshift 100-yard hole when he hit a hole in one.

The softball throw event winner was a 36th Signal Battalion soldier: Phillip Goeken,



Korea Chapter. *Sylvia Campos reaches a total of 73 sit-ups while competing in the 19th Support Command District Subchapter's first annual 'Olympics.'*

assigned to the 293rd Signal Co., hurled the ball 251 feet, just over three feet farther than his closest competitor, Immanuel West of the Automated Management Information Center.

The four-mile bicycle race was next on the agenda, and Dale Iannello, a diver from Pohang, coasted to victory with a time of 12:55. In the sprinting event, Pusan Storage Facility's Levi Holton was clocked at 10:04 in the 100-yard dash. The 20-year-old winner from Passaic, N.J., edged out second-place finisher Charles Jones of the 227th Maintenance Battalion.

The mile relay win went to the team from Headquarters and Headquarters Co., 196th Support Command. Team members were Fred Fergusan, Jennifer Carter, Lee Ki Won and Andrew Jeffery.

The most taxing events of the day were the Ironman and Ironwoman competitions, which were run just like a PT test with an aggregate score on push-ups, sit-ups and a two-mile run determining the winners. The command's Ironman was Wayne Kirkbride, who has completed over 7,500 miles in the "run for your life" program. Mr. Kirkbride, from Denver, Colo., did 97 push-ups, 106 sit-ups and ran two miles in 12:15.

The Ironwoman was U.S. Army Garrison-Camp Page's Sylvia Campos, a 21-year-old native of Ontario, Canada, whose winning score included 55 push-ups and 73 sit-ups.

At the conclusion of the competition, the commander's cup was awarded to Headquarters and Headquarters Co., 19th Support Command, which edged out runner-up 2nd Quartermaster Group, with the 227th Maintenance Battalion and the 34th Support Group tying for third.

Football Luncheons Are a Hit with Fans

The Thursday before each Army football game, the West Point Area Chapter sponsors a Quarterback Luncheon in the officers' mess at the U.S. Military Academy. In the eight years these luncheons have been held, the crowds have never been larger or more enthusiastic than they were this year.

At each luncheon, the head coach of the Army football team, Jim Young, talks about the last game and the next one. His pride in the performance of this hard-hitting group of young athletes is unmistakable. Coach Young has selected a different cadet senior from the team to be the offensive and defensive co-captains of each game. This practice has produced some inspired leadership and great entertainment as well.

For example, the offensive and defensive captains for the Rutgers game, Cadets Dee Bryant and Jim Jennings, wore camouflage field caps with their class gray uniforms as they performed a skit before a luncheon crowd of 500 officers, wives, cadets and local civilians. Their skit format was the Five Paragraph Field Order—the mission, of course, was "to whip the Scarlet Knights of Rutgers in Giant Stadium the following Saturday."

Under "situation, enemy forces," they reported that Rutgers has a tendency to underestimate their enemy. Under "friendly forces," the Army team's morale was called "indescribable," their strength "awesome" and weaknesses "nonexistent." "Coordinating instruction" contained a statement on air defense against the Rutgers passing attack—"If it flies, it dies."



West Point Area Chapter. *Shown attending a chapter football luncheon are* (left to right): *Carl Ulrich, West Point director of athletics; Charles Weyand, chapter vice-president; cadet football players Jim Jennings and Dee Bryant; Richard Gruenther, chapter president; and head football coach Jim Young.*

Commander Speaks At Gallant Pelham

Maj. Gen. Eugene R. Cromartie, commander of the U.S. Army Criminal Investigation Command, attended the quarterly meeting and luncheon of AUSA's Gallant Pelham Chapter at the Ft. McClellan, Ala., noncommissioned officers' club.

At that meeting, awards were presented to Ft. McClellan's drill sergeant of the year, SFC Timothy J. Porter of Co. A, 11th Military Police Battalion (OSUT), and drill sergeant of the quarter, S.Sgt. Joseph R. Santos of Co. E, 11th Military Police Battalion (OSUT). CSM James W. Frye was also honored for his achievements as a soldier and leader.

Gen. Cromartie opened his talk by thanking Chapter President Col. George Hines USA, Ret., and all those present for allowing him to be a part of the event. He then recalled his entry into the Army from the Reserve Officers' Training Corps.

"I remember that I felt incredibly challenged by the Army as a whole. I enjoyed the comradery that I saw almost immediately. I was intrigued by the opportunities for travel that the Army could offer me and I soon found myself living my own patriotism. I was doing something honorable and nobody could say otherwise. I was proud to be a soldier and I, in turn, put that pride back into my work as a soldier."

The general said that, for him and for others he has known, the biggest event in their military careers was the Vietnam war. He quoted the anonymously written poem, "An Unknown Soldier Speaks" to convey his pride in being a soldier and the pride he feels when he looks at today's soldiers.

"At that time, the most heartening aspect of the Army for me was that I was working with the very best soldiers I have ever seen," he said, "and when I look at today's soldiers, the young and proud volunteers, I see more potential for excellence than ever before."

Perhaps the most moving portion of Gen. Cromartie's address was an excerpt he read from a poem by a soldier he knew only as Sp.4 Nelson, who had served under him in Vietnam. The audience remained silent as the poem brought to mind the loss of loved ones and the experiences of that era.

He closed his speech by calling all soldiers "winners" and Col. Hines concluded the event by honoring the general with a plaque for his contribution to making the meeting a success and for his many contributions to AUSA.

800-336-4570

That's the toll-free number to call AUSA national headquarters. The AUSA Action Line is open 8:30–5:00, Monday through Friday, except holidays. If you have a question about AUSA, give us a call.

★ STAR CHAPTERS ★

Chapters that reach their aggregate membership targets are classified as Star Chapters and will retain that status until they fail to reach any subsequent membership goal. The following chapters have achieved Star Chapter status. Chapters annotated with an asterisk have attained their semiannual goal based on the 31 December, 1984, membership targets and the end-November, 1984, membership statistics. Those chapters without asterisks achieved their Star Status based on the 30 June, 1984, membership goals.

Alaska (Anchorage)
* Ark–O–Tex (Texarkana, Tex.)
* Bavarian Alpine (Munich, Ger.)
Berlin (Ger.)
* Bluegrass (Lexington, Ky.)
* Blue Mountain (Harrisburg, Pa.)
* Braxton Bragg (Ft. Bragg, N.C.)
Capital District of New York (Albany)
* Captain Shreve (Shreveport, La.)
Central California (Fresno)
* Central Texas–Ft. Hood (Killeen)
* Cincinnati (Ohio)
Coastal Empire (Ft. Stewart, Ga.)
Columbia River (Portland, Ore.)
Chattahoochee Valley–Ft. Benning (Ga.)
Connecticut (Norwalk)
Daniel Boone (Ft. Knox, Ky.)
* Denver Centennial (Colo.)
* Des Moines Freedom (Iowa)
Detroit (Mich.)
* Dix (Ft. Dix, N.J.)
* Douglas MacArthur (Norfolk, Va.)
8th Infantry Division (Bad Kreuznach, Ger.)
First-in-Battle (Grafenwöhr, Ger.)
* Florida Gulf Stream (Miami)
Ft. Armstrong (Rock Island, Ill.)
* Ft. Jackson–Palmetto State (Columbia, S.C.)
* Fort Pitt (Pittsburgh, Pa.)
Ft. Riley–Central Kansas
* Fort Worth (Tex.)
* Gallant Pelham (Ft. McClellan, Ala.)
* GA Omar N. Bradley (Ft. Bliss, Tex.)
Gen. Creighton W. Abrams (Frankfurt, Ger.)
* Gen. Joseph W. Stillwell (Ft. Ord, Calif.)
* Gen. W. C. Westmoreland (Reno, Nev.)
* George Washington (Washington, D.C.)
Greater Augusta–Ft. Gordon (Ga.)
Greater Gulf Coast (Mobile, Ala.)
* Hawaii (Honolulu)
Heidelberg (Ger.)
* Henry Leavenworth (Ft. Leavenworth, Kan.)
* Indiana (Ft. Benjamin Harrison)
Isthmian (Balboa, Republic of Panama)
Japan (Camp Zama)
* Korea (Seoul)
* Leonidas Polk (Ft. Polk, La.)
* Long Island (N.Y.)
* Magnolia (Jackson, Miss.)
* Maine (Saco)
* MG William F. Dean (Oakland, Calif.)
Marne–Franconia (Würzburg, Ger.)
* Massachusetts Bay (Boston)
* Mid-America (Wichita, Kan.)
Middle Forge (Dover, N.J.)
Mid-Palatinate (Kaiserslautern, Ger.)
Mission Trails (Santa Barbara, Calif.)
Montana Big Sky (Helena)
* Mother Lode (Sacramento, Calif.)
* New Orleans (La.)
* New River Valley (Radford, Va.)
* Norddeutschland (Bremerhaven, Ger.)
Old Ironsides (Ansbach, Ger.)
* Pikes Peak (Ft. Carson, Colo.)
* Polar Bear (Fairbanks, Alaska)
Puerto Rico (Ft. Buchanan)
* Robert E. Lee (Ft. Lee, Va.)
* San Bernardino–High Desert (Barstow, Calif.)
* San Jacinto (Houston, Tex.)
Seattle (Wash.)
* Southeastern Oklahoma (McLester)
Southern Arizona (Ft. Huachuca)
* Southern New Mexico (Las Cruces)
* Spearhead (Frankfurt, Ger.)
Stuttgart (Ger.)
Susquehanna (Aberdeen, Md.)
* Tacoma–Ft. Lewis–Olympia (Wash.)
Tennessee–Kentucky (Ft. Campbell, Ky.)
* Texas Capital Area (Austin)
* West Point Area (West Point, N.Y.)
Wolverine (Grand Rapids, Mich.)
Yorktown (Zweibrücken, Ger.)





New York Chapter. *Col. Joseph Markle (left) presents the chapter's annual Distinguished Service Award to Hon. Karl R. Bendetsen who accepted on behalf of President Reagan, who was cited for his "superlative service to his country."*

Emphasis on Preparedness

Total Army Discussed at Topeka Chapter

Maj. Gen. Ronald L. Watts, commander of the 1st Infantry Division (Mech), Ft. Riley, Kan., spoke on the Total Army at a Topeka Chapter luncheon meeting. Gen. Watts also spoke of a commitment to preparedness by the Army National Guard, the Army Reserve and the active Army, which together form the Total Army.

Gen. Watts said, "Our Army has experienced a significant change in force structure to counter the changing threat." The most profound change, according to the general, has come from an emphasis on the expanded role of the reserve forces. In order to protect our freedom, it is necessary that all components of this "Total Force" or "Total Army" be well trained.

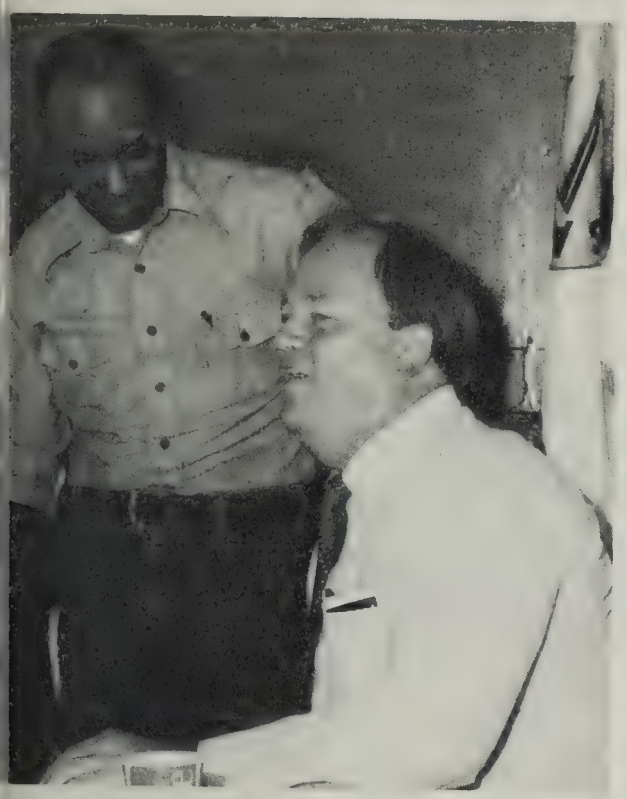
"The excellence we are striving to achieve together in our Army is necessary to deter conflict or, if deterrence fails, defend our national interests," Gen. Watts said in emphasizing the necessity of a Total Army.



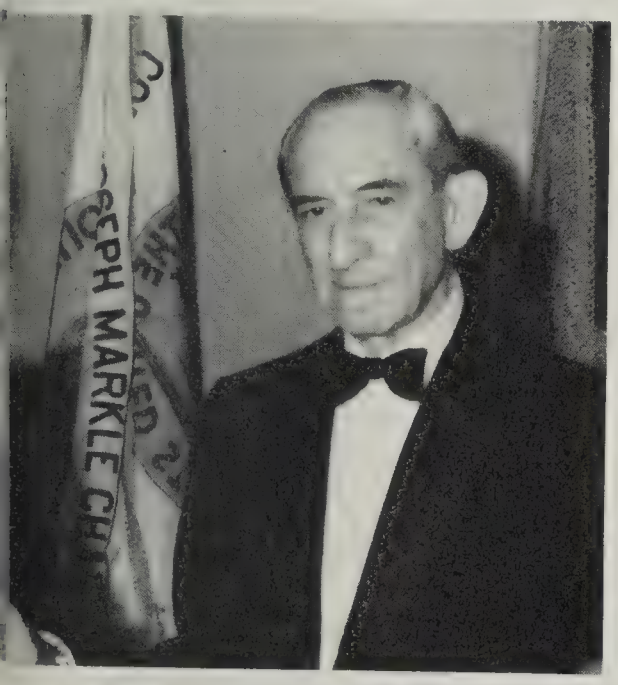
Topeka Chapter. *Maj. Gen. Ronald L. Watts, commander of the 1st Infantry Division (Mech) and Ft. Riley, Kan., spoke on the Total Army at a luncheon.*



Around the Chapters



Chattahoochee Valley–Ft. Benning Chapter. *Georgia Secretary of State Max Cleland* (right), chats with (left to right): *Ft. Benning Commander Maj. Gen. John W. Foss, CSM Albert Avila and SGM Robert Spencer at the annual chapter fish fry and fall membership meeting. Secretary Cleland was the guest speaker for the event, which was attended by over 400 people.*





Japan Chapter. *The Camp Zama monthly bazaar, sponsored by the Japan Chapter, featured bargain-packed tables of merchandise from over 50 vendors, many of them chapter corporate members.*



James R. Sesslar Jr. Memorial Company (Northern Michigan University). *Maj. Phillip Pignataro* (second from right) *welcomes cadet members* (left to right): *Lynn Kornegger, Timothy Zaenglein, George Lakotish and Jed Charles to K. I. Sawyer Air Force Base, Mich., where the cadets will participate in an aerial refueling mission aboard a KC–135.*

Chapter Notes

Tacoma–Ft. Lewis–Olympia Chapter. More than 800 members and guests participated in a walkfest cosponsored with the Ft. Lewis Morale Support Activities and the Evergreen State *Volksport* Association. The ten-kilometer event was held at the Nature–Garden Center.

Gallant Pelham Chapter. The deputy assistant secretary of defense for logistics and materiel management, Hon. Robert W. Daniel Jr., stressed the importance of materiel management while speaking at a chapter luncheon. Honored was Col. Leo J. Pigaty, Anniston Army Depot commander, who was awarded a Department of Defense maintenance awareness stock certificate.

The chapter also hosted a ten-kilometer race and a two-mile run with over 500 runners participating.

Cincinnati Chapter. Lt. Gen. Edward C. Peter, commanding general, Fourth U.S. Ar-

ASSOCIATION OF THE U.S. ARMY

AIMS AND OBJECTIVES

THE ASSOCIATION OF THE U.S. ARMY shall be an organization wherein all who are in accord with its objectives may join in the exchanging of ideas and information on military matters, and in fostering, supporting and advocating the legitimate and proper role of the Army of the United States and all of its branches and components in providing for and assuring the nation's military security.

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my, compared the Soviet Army and its materiel with that of the U.S. Army in his speech at a chapter dinner.

Kirchgoens Subchapter (Spearhead Chapter). CSM Robert F. Lindsey, 1st Brigade, 3rd Armored Division, stressed the importance of supporting AUSA in his talk to more than 400 soldiers at a buffet held at the Top of the Rock NCO and Officers' Club.

Hanau Subchapter (Spearhead Chapter). The subchapter sponsored a unit organization day with the Headquarters and Headquarters Battery, 3rd Armored Division Artillery; F Battery, 333rd Target Acquisition Battery; and the 61st Military Police Co. participating. Games were organized for the children and prizes were awarded to contest winners.

Des Moines Freedom Chapter. The commanding general of fourth U.S. Army, Lt. Gen. Edward C. Peter, discussed the improving quality of his command while addressing a chapter dinner meeting held at the Camp Dodge Recreation Hall. Honored at the dinner were Soldiers of the Year Sp.4 Yvonne C. O'Donnell, National Guard, and Sp.4 William Kurt, U.S. Army Reserve.

St. Louis Chapter. The Corps of Engineers barge transported members and guests on a trip up the Mississippi while they enjoyed a buffet dinner. Proceeds from the excursion were donated to the chapter's awards banquet fund. Beer for the cruise was donated by Anheuser–Busch Inc., an AUSA sustaining member company.

Capital District of New York State Chapter. Chapter members participated in a parade and ceremonies which recognized POWs and MIAs.

Berlin Chapter. Berlin's 24th Annual German–American *Volksfest* was held recently. This year the event drew over 400,000 visitors to *Volksfest* grounds designed to support the theme, "California—Land of Contrasts." This event provides the Berlin Chapter with its major yearly income-producing opportunity. As managers of the California wine booth, chapter members earned over $7,000 to support activities for the 1984–85 organizational year.

Fort Worth Chapter. The former commander of the XVIII Airborne Corps and Ft. Bragg, N.C., Lt. Gen. Jack V. Mackmull, reviewed "Operation Grenada" while speaking to a chapter dinner meeting at the Fort Worth Hilton.

Middle Forge Chapter. First AUSA Region President Donald J. Amorusa, senior vice-president and general manager, Norden Systems, discussed at a chapter luncheon the interface between AUSA and industry. Chapter scholarship winners Carolyn Fabian, Robert Moran and Gary Smolyn were honored.

Mission Trails Chapter. The director of the Army Staff, Lt. Gen. Arthur Brown Jr., spoke on the improved caliber of Army recruits and the high morale in today's Army in a speech given to members and guests at a meeting held at the Channel City Club.

Japan Chapter. Lt. Gen. Carl E. Vuono, deputy commander, U.S. Army Training and Doctrine Command, discussed the "Army of excellence" at a chapter breakfast meeting.

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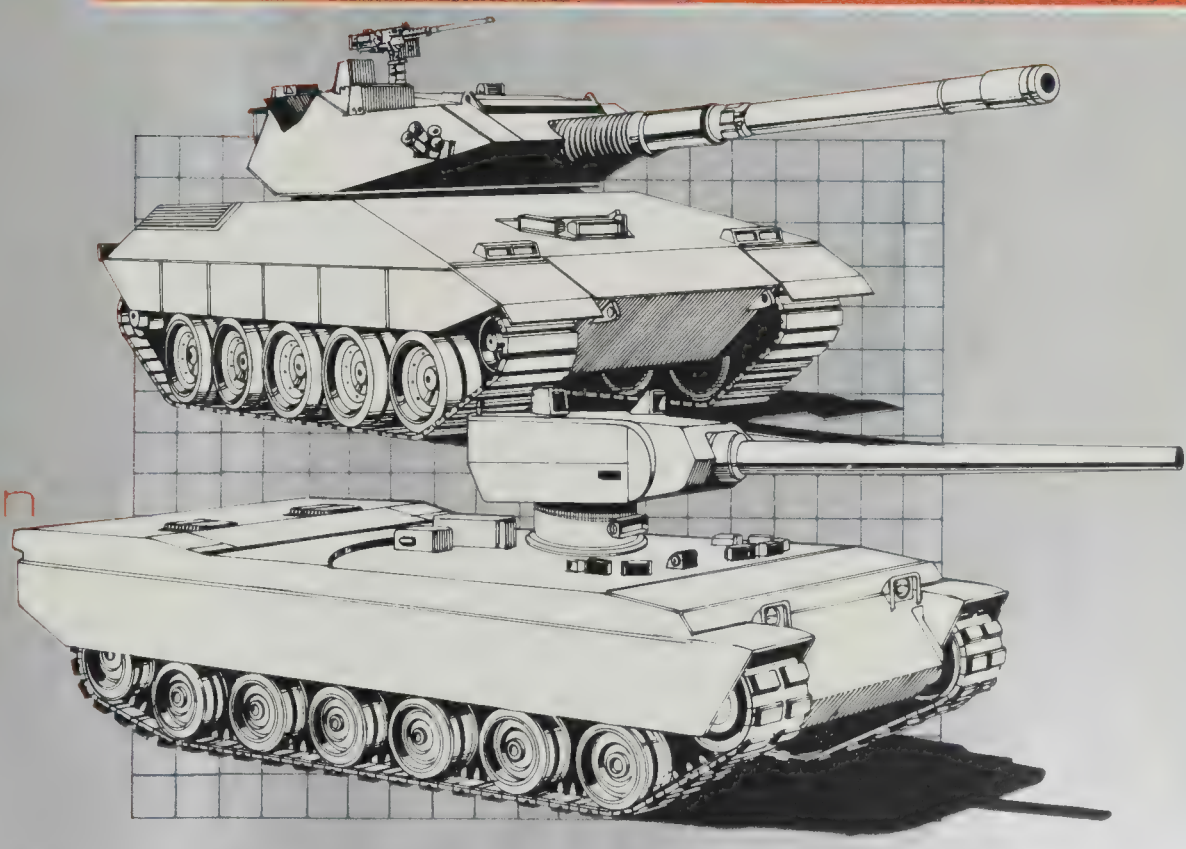
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The Pilot Night Vision Sensor (PNVS) provides the AH-64A crew with real-time thermal imagery of the terrain, permitting combat operations in complete darkness. Flight symbols are superimposed on the imagery.

The second FLIR sight for night operations is part of Apache's Target Acquisition and Designation Sight (TADS), which enables the crew to search for, detect, recognize and engage targets. TADS also provides high-power direct-view optics, a high-resolution video system, a laser designator and tracker, and a range finder. Data from TADS is used by the Apache fire control computer for all of the helicopter's weapons systems.

Apache's FLIR systems are just two of the many reasons why this night fighter is "a total system for battle."

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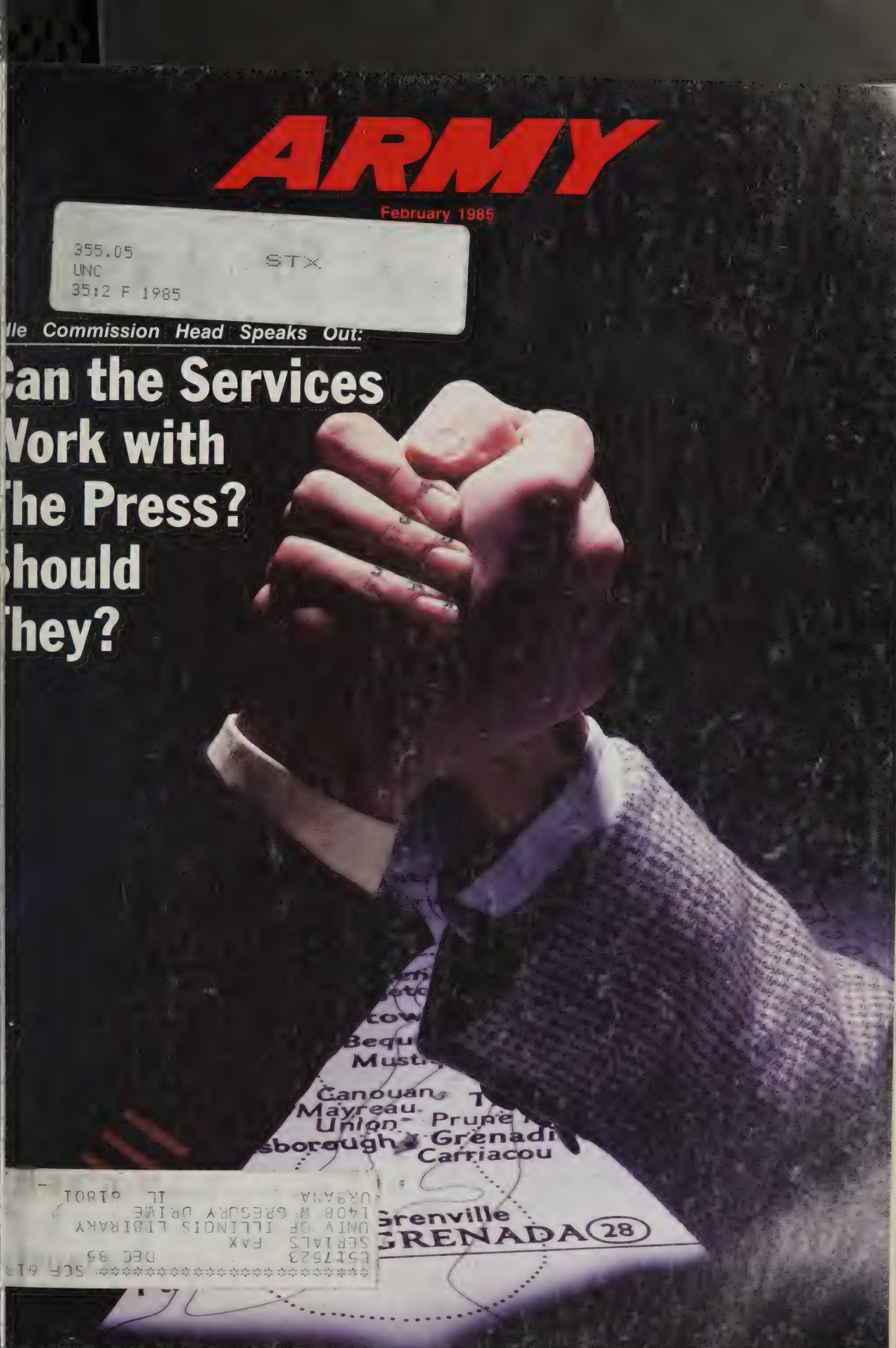
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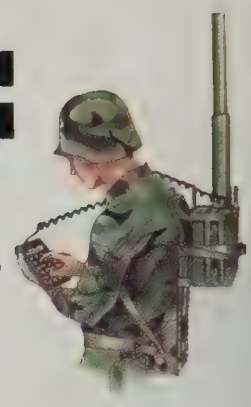
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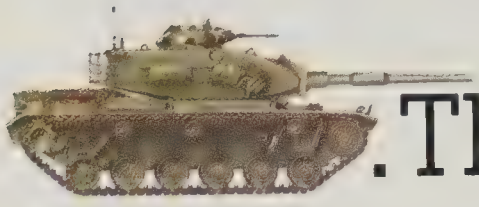
Can the Services Work with The Press? Should They?

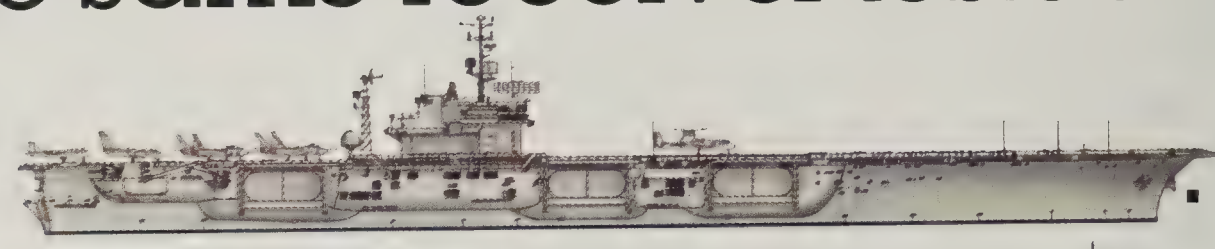


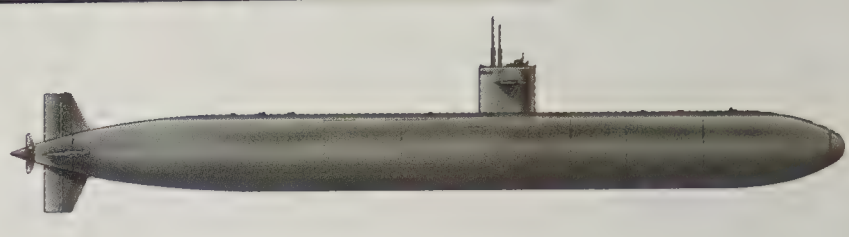
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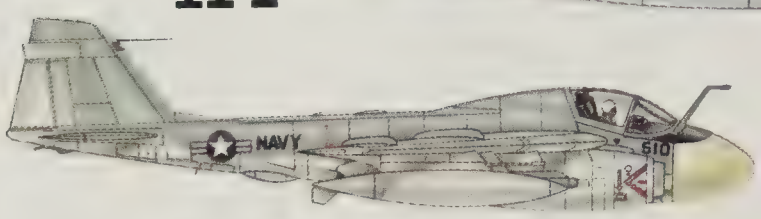
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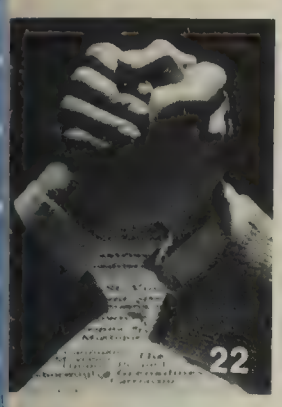
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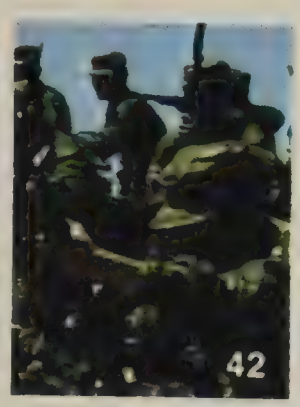
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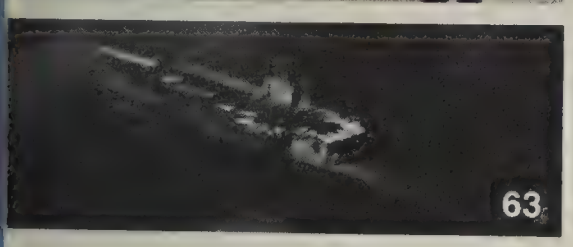


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ARMY
The Magazine of Landpower

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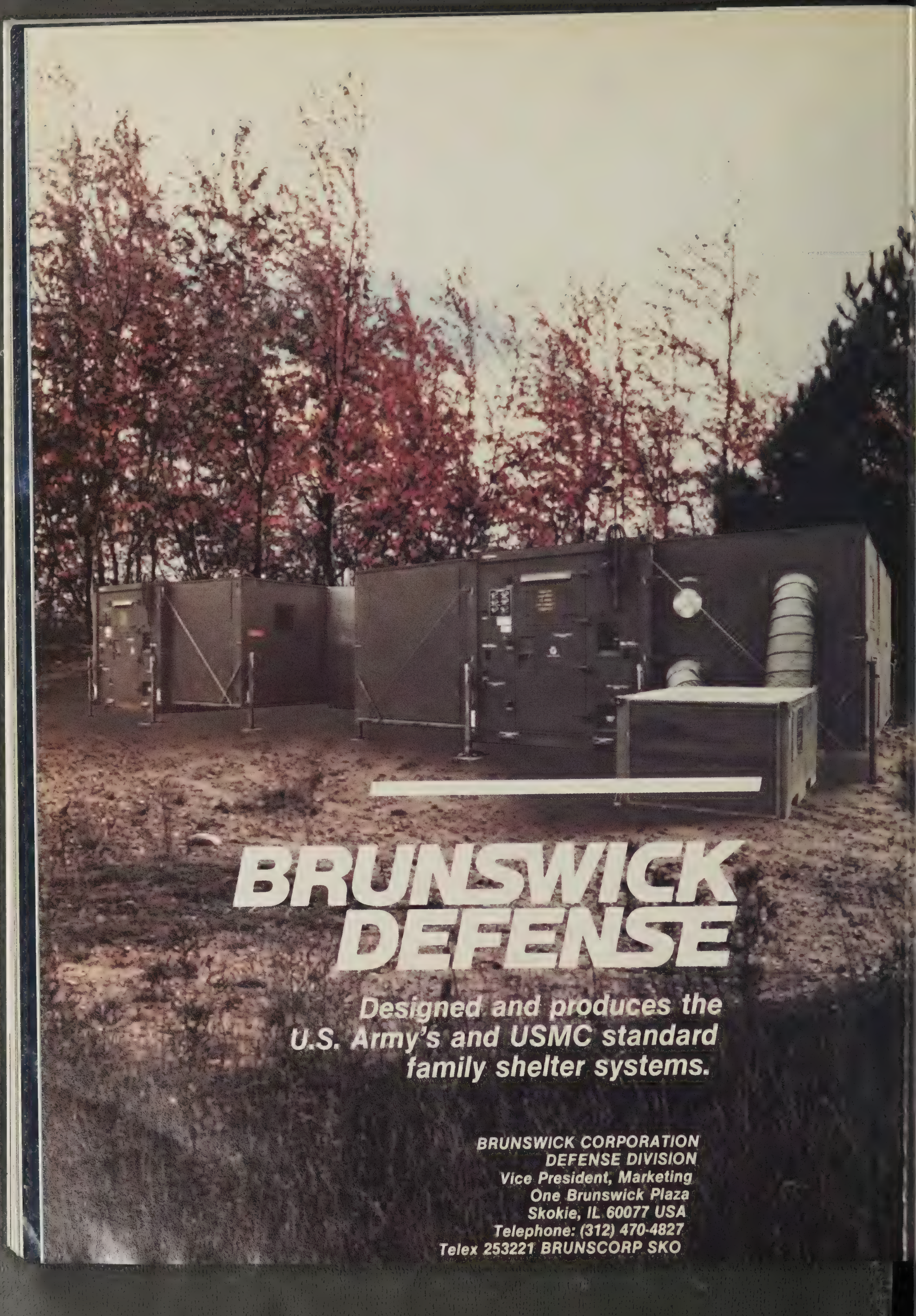
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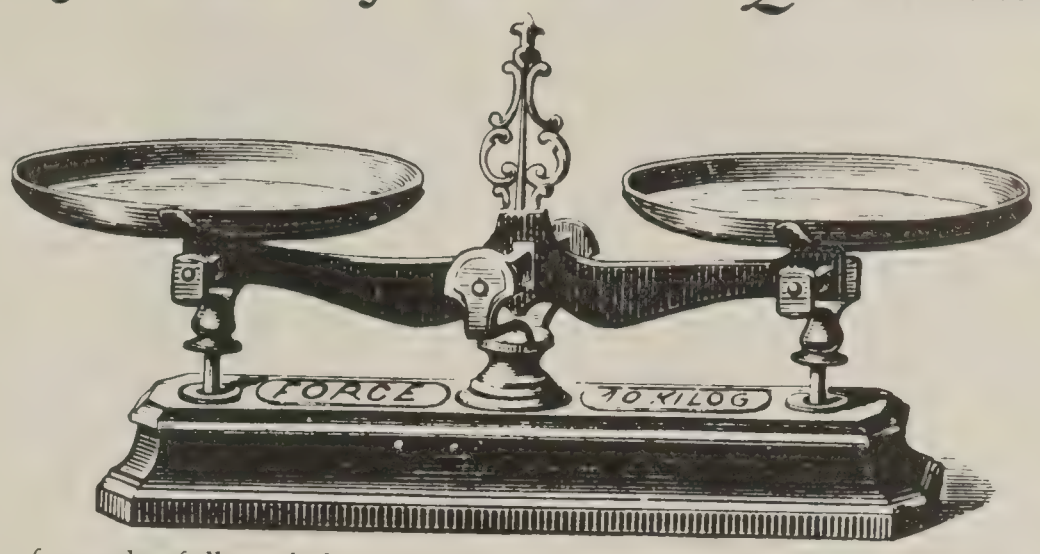
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The Call for a Military Code of Ethics Is Questioned

■ In response to Richard T. De George's "Defining Moral Obligations: The Need for a Military Code of Ethics" (December 1984), a few cautionary considerations are in order. Discussions on such a code, its necessity and content have been held for years. Nietzsche's statement, "Whoever battles with monsters had better see that he does not turn into a monster" is surely apropos to the military.

I have no quarrel with Professor De George's philosophy and believe that most professional military share it with him. I do have some reservations as to the codification of the philosophy.



Letters

When fleshed out and implemented, will the code be a "laundry list" of specifics much like a poorly prepared job description? Will it serve as a poster, by that hung in barracks and orderly rooms showing that we have met a "requirement"? (Remember the Code of Conduct Cards we all had to carry?) At the other extreme, could the code become a vehicle for legitimate or witch-hunt complaints against superiors with ensuing investigative, administrative or legal action?

At the risk of sounding flippant, might a code become as open to debate as haircut regulations?

I well remember the dialogue between students and senior officers conducted at the Army Command and General Staff College and Combined Arms Center in the 1973–74 school year. Seniors and juniors had Vietnam experience. Juniors were aggressive in questioning seniors' decisions and resulting orders which they, the juniors, felt impinged on their personal or professional honor. Specifics were dealt with with some acerbity initially. Small group discussions probably were more frank than any before involving senior and junior officers.

While not all differences were resolved, great insight was gained. Ethics and morality were scrutinized in all aspects. If a code is deemed necessary, perhaps the documentation of these discussions could be a base.

Morality and ethics are a product of the codes and *mores* of each society. Ours come primarily from Judeo-Christian thinking. Codification of specific "do's" and "don'ts" is akin to quantifying smoke.

For many years the following quotation has hung over my desk. It is all the code need: "The soldier trade, if it is to mean anything at all, has to be anchored to an unshakable Code of Honor. Otherwise, those of us who followed the drum become nothing more than a bunch of hired assassins walking around in gaudy clothes . . . a disgrace to God and mankind."

COL. PAUL B. WELCH JR.
U.S. Army, retired
Pisgah Forest, N.C.

■ Richard T. De George, in "Defining Moral Obligations: The Need for a Military Code of Ethics" (December 1984) states: "Although doctors, lawyers and others have professional, ethical or moral codes, there is no such code for the military. . . . " Professor De George's statement is not entirely correct.

The March 1963 *Army Information Digest*, Pages 20–21, carries an item entitled "Code of Ethics for Government Service." This code encompasses the military as part of the Executive Branch. The code, formulated by Congress, reads:

"Any person in government service should:

■ Put loyalty to the highest moral principles and to country above loyalty to persons, party or government department.

■ Uphold the Constitution, laws and legal regulations of the United States and of all governments therein and never be a party to their evasion.

■ Give a full day's labor for a full day's pay, giving to the performance of his duties his earnest effort and best thought.

■ Seek to find and employ more efficient and economical ways of getting tasks accomplished.

■ Never discriminate . . . by the dispensing of special favors or privileges to anyone whether for remuneration or not and never accept, for himself or his family, favors or benefits under circumstances which might be construed by reasonable persons as influencing the performance of his governmental duties.

■ Make no private promises of any kind binding upon the duties of office, since a government employee has no private word which can be binding upon public duty.

■ Engage in no business with the government, either directly or indirectly, which is inconsistent with the conscientious performance of his governmental duties.

■ Never use any information coming to him confidentially in the performance of governmental duties as a means of making private profit.

■ Expose corruption wherever found.

■ Uphold these principles, ever conscious that public office is a public trust."

COL. JAMES D. STRACHAN
Ft. Bragg, N.C.

■ Richard T. De George's call for a military code of ethics was excellent ("Defining Moral Obligations: The Need for a Military Code of Ethics," December 1984). Three points demand comment, however.

First, and most important, he says that the military does not now have a code. This is not true: there is a code and it is alive and well. It is just not the single, formal, written code he proposes. The Code of Conduct (Army Regulation 350–30) applies to all ranks of all services. The first chapter in *The Army Officer's Guide* is entitled, "The Code of the Army Officer."

The officer's guides for the other services have similar chapters. "The Armed Forces Officer" (DA pamphlet 600–2) devotes several chapters to subjects related to the code, among them "The Meaning of Your Commission," "Forming Military Ideals," "Responsibility and Privilege" and "Leaders and Leadership."

Likewise, *Field Manual 22–100, Military Leadership*, and similar publications of the other services, address professional ethics extensively. There are many other excellent discussions of the code. As the officer's guide observes, the code is part traditional and unwritten, part official and written. It is living, changing and developing constantly; it is the consensus of many documents, traditions and the ethical ideals of our society.

Second, a formal written code would have many advantages over the present

code, but it would also have some potential disadvantages, which Professor De George did not address. There is the risk that the code might become emasculated in the process of achieving consensus. There is the risk that once the code is published, the issue of ethics will be considered resolved and be neglected.

There is a similar risk that the code will be regarded as "engraved in stone" and allowed to become outmoded. Finally, there is risk of a perception or rationalization that what is not included in the code is unimportant, irrelevant or permissible.

The final point is that constructive thought and discussion of ethical issues is far more important than any particular code.

A single, written, formal code would be nice, but the code we have is excellent and has served us well. What we need most of all is more discussion of the subject in both our military schools and professional publications such as ARMY. Keep it up.

LT. COL. ROBERT G. FEAR
Tampa, Fla.

Much to Learn

■ The letter to the editor from Rennie Payne ("Causes of War?," December 1984) provided a few kicks and a few puzzles. Unfortunately, I didn't know his father in the old Army. But, while his interest is appreciated, his questions certainly are familiar. His attention to broad social contexts is commendable, but I hope I don't sound patronizing when I assure him that he has a long way to go. I don't think he quite realized what his own subject was.

Mr. Payne talked about whole cultures, whole societies and their characteristics. Then he tried to compare the characteristics of armed forces, which are not cultures or societies at all, but sub-subcultures or enclaves within societies. The characteristics of cultures and nations cannot be compared readily with characteristics of armed forces.

Some of Mr. Payne's questions were quite precious; for example, "What does the Commandment really mean?" (You know, it's the one that says "Thou shalt not kill.") That very question must have evoked ten thousand responses by serious thinkers over millennia.

There exists a whole body of literature on that and related questions. Until one consults the relevant literature and understands it, one possesses only the status of an itinerant tinker in imagining that he is asking original questions. Many great minds in many societies have wrestled with such issues.

The armed forces do not establish general rules for their own governance; it is the whole society and culture that do so.

ARMY invites letters to the editor. The subject matter may be about material that has appeared in the magazine or about any topic which the writer feels would be of interest to ARMY readers. The editors reserve the right to edit letters for reasons of style, accuracy or because of space limitation. All the letters must be signed, and while we prefer to carry the writers' names we will consider requests for withholding them if there is a compelling reason to do so.

The Editors

Only in battle can military forces be said to be violent and their violence is controlled. If one visits Ft. Benning, Ga., or an Air Force or Navy base, one finds them to be peaceful communities. (If Rennie Payne is an Army brat, how is it that he does not know this?)

Beware the man of one book. Perhaps young Payne's quarrel is with American culture as a whole, or Western culture or modern culture.

Even so, to assert that " . . . most of us had deprived childhoods" is to manifest pretty deep ignorance of American society. He asks: "How many ARMY readers could embrace their pals?" For what it's worth, the answer is that many could, and do.

The war colleges chew on many sociological issues, as well as on ethical, political, economic, technological—even philosophical—issues. I hope Rennie Payne can visit one, or at least read more about them.

COL. ANTHONY L. WERMUTH
U.S. Army, retired
Mt. Dora, Fla.

Goldwater Interview Kudos

■ I have just finished reading the Sen. Barry M. Goldwater interview, "Foe of Readiness Is Complacency" (December 1984). It was an absolutely tremendous



"Peace is too important to be left to the civilians."

article which should be sent throughout Congress and the Senate to those who are directly involved with and responsible for supplying our armed forces with the latest and greatest to do their job if and when the time comes.

We all hope war never comes, but if it does, as Sen. Goldwater stated, "it's getting there the firstest, with the mostest and the bestest" that will enable us to win. Too bad more of Sens. Goldwater's and John G. Tower's (R-Tex.) colleagues don't feel the same way; they just can't do it alone. I hope that liberals will become more concerned with their own country, its well-being and its defense.

I share Sen. Goldwater's concern over these matters, as I always have. Coming from what he terms "a new breed," I have not subscribed to the adage, "Better Red than dead," which, in my opinion, was the message sent during the Democratic National Convention. Negotiate no matter what! With an unverifiable arms agreement, the Russians won't have to fire a shot.

PAUL R. KOPCZYNSKI
Philadelphia, Pa.

In Defense of CGSC

■ It is humorous and yet sad that Maj. Scott R. McMichael's scribblings found their way into the "Cerebrations" department of ARMY magazine ("CGSC Change Necessary, Overdue," December 1984). If these words reflect cerebrating, Lord help the U.S. Army Command and General Staff College.

In a few short paragraphs, Maj. McMichael has judged who should or should not attend the college, what branches of the service are obviously superior to all others and has "created" 97 additional battalion command and operational level staff slots. What genius! Perhaps Maj. McMichael could also have eliminated National Guard, Reserve, Marine Corps, Air Force, female and allied students too. He'd be able to staff an entire corps headquarters!

After suggesting the elimination of dentists, lawyers, doctors, veterinarians, finance officers and chaplains from the school, I only hope that his teeth are good, he is never sued, he and his dog stay healthy, his pay never gets messed up and that he has someone to say a brief prayer over his gravesite.

Best of luck, major.

MAJ. PATRICK J. MACGILLIS
Milwaukee, Wisc.

■ In responding to Maj. Scott R. McMichael's astonishing "CGSC Change Necessary, Overdue" ("Cerebrations," December 1984), it is difficult to know with which fallacy to begin.

First and foremost, perhaps Maj. Mc-

Michael has forgotten that the overwhelming majority of combat service support officers are officers of the line. Regarding those not of the line, he might profitably review the battlefield mission of the Medical Service Corps; his life might depend on it.

Second, yes, the old School of the Line was principally of and for the combat arms, just as the U.S. Military Academy was once principally an engineering school. The Ft. Leavenworth, Kan., of today is a command and general staff college—not, as Maj. McMichael would apparently have it, simply a G3 academy.

Third, most support branches, including my own (ordnance), are divided into the majority who look forward to and beyond the forward line of own troops and the minority who are more oriented toward depot-type support. Experience proves that an attitude of "service to the line, on the line" is a direct function of professional association with the arms throughout one's career.

The Army Command and General Staff College is a most significant building block in this all-important process. The quaint notion that "ample opportunities exist in the field for this process to occur" in the hectic Army of the 1980s hardly merits discussion.

Finally, it is difficult to see how Ft. Leavenworth's standards would be improved by summarily disqualifying numbers of highly qualified officers and replacing them with people who otherwise couldn't make the cut. The mind boggles.

All that said, Maj. McMichael does identify a very real problem: inadequate preparation on the part of a substantial number of students. This problem will not be solved by a new caste system. After all, a large number of combat arms officers arrive woefully underprepared in logistics, thereby lowering "the caliber of instruction . . . to the novice level" in that discipline. The only solution is to raise the level of preparation across the board.

How to do this? One way would be to consider for selection only those officers who have completed substantial preparation by extension: half, or perhaps more, of the current nonresident course. This would free considerable time, now devoted to the basics, for advanced work more appropriate to the college's stature.

A side benefit would be to weed out the careerist who couldn't care less about professional education and attends only because he doesn't dare to turn his selection down. Getting rid of this type would do far more for the college than moving the support services to the back of (or rather off) the bus.

COL. DAVID A. APPLING
U.S. Army, retired
Morgan Hill, Calif.



■ As one of the officers Maj. Scott R. McMichael's proposal would have excluded from the Army Command and General Staff College, I feel entitled to a response ("CGSC Change Necessary, Overdue," "Cerebrations," December 1984). I completed the CGSC program twice, once through the Reserve system and once in residence (class of 1984). Neither experience bears out the charge that the course is toned down to accommodate the relative ignorance of the noncombat branches.

Any reasonable evaluation of the program ought to recognize the diversity of the Officer Corps. Some officers are great tacticians and others are not. None has engaged in his craft as sole specialty and none is likely to in the foreseeable future. There is a great and healthy diversity of interest and skill in the corps.

The advanced tactical training already offered at the school together with the newer two-year program for selected graduates offer the Army a much better solution than Maj. McMichael's proposal. The Army's need for skilled tacticians is being met better than ever. But part of that "better" is that officers are trained in the diversity that is part of the military community.

Does a chaplain need to attend the college? Does a doctor need to attend? The answer is not only "yes," but equally that infantry and armor officers need Judge Advocate General's Corps, Adjutant General and Air Force officers in the course to fully learn their craft.

When we form up on the battlefield as divisions or corps, we cannot hope to function together if we have not trained together from the start. Maj. McMichael's solution takes us back to a narrower view of warfighting which excludes the fact that strong teams (units) win battles, not star tacticians.

The marvel of the college's training is that it is training done together. We risk that if we send all those not in combat and combat support fields off into a corner to learn by themselves. I recommend to Maj. McMichael the fifth chapter of Book III of Karl von Clausewitz's *On War*, "Military Virtues of the Army." Maj. McMichael's solution risks the cohesion that the author wisely saw as essential to combat power.

CHAPLAIN (MAJ.) WAYNE J. LEHRER
Carlisle Barracks, Pa.

■ In reply to the "Cerebrations" article in the December 1984 issue by Maj. Scott R. McMichael ("CGSC Change Necessary, Overdue"), I was totally unaware that the "tablets" of doctrine were restricted to only a certain few. Never in my years of association with the service, starting in 1957, have I come across such unmitigated impudence and elitism. This attitude violates the very strength of the Army's team concept and cuts against the fiber of military training.

Members of the corps that Maj. McMichael would proscribe are in as great a need of the Army Command and General Staff College as anyone else. Those corps move for the line, and honestly exist for the line, and damn well need to know the line's capabilities and intentions.

The Army is a whole, not a chance association of subgroups. As one interested in education, I have always felt that the

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Army mainstreamed, that it had no "fast track" or "general subjects" curriculum.

In every course, each class member brings an inventory of skills and experiences that are to be shared. In that sharing, the synthesis that comes from the students and the material is what the college exists for—the power of learning and knowledge. If there is any restriction on instruction it is due to a misplaced assumption of importance by some people.

Army Medical Department officers I have soldiered with may have been subjected to "force-feeding" but their units were always in tune with the line and in the field, the battlefield, there was mutual understanding and clear two-way communication.

I cannot understand the major's bifurcated position. According to him some people are not smart enough for the college or don't need it (certainly not at the expense of the line), but, then, they do need something because of a "shortfall" in education.

Lt. Col. David M. Watt
AUS, retired
Bartlett, Tenn.

■ Thank God that the men who run our Army don't have the mentality of Maj. Scott R. McMichael. His vision extends to his nose ("CGSC Change Necessary, Overdue," "Cerebrations," December 1984).

Each of the reasons he presented for changing the Army Command and General Staff College has overwhelming countering arguments. His first reason was "people in the fields mentioned do not need the CGSC resident education." The truth is that combat service support (CSS) officers most definitely need it. CSS officers must know and understand the Army in order to implement medical policies, pay policies and the like. That knowledge comes, in part, from attendance at service schools.

The college is more than tactics instruction. All military officers need a worldwide perspective: strategic, logistics and management studies, staff development, and joint and combined operations, to name a few. As for the statement, "the instruction has no bearing on the jobs they will perform," I wonder if Maj. McMichael has considered his own college/university training? Such training is fundamental for officers, yet normally has no direct bearing on a specific job.

The second reason was "the attendance of members of these branches . . . lowers the caliber of instruction." Certainly this observation is conjecture and personal opinion. Combat arms and combat support officers are not any more gifted than combat service support officers. There were many combat arms officers who had difficulty in tactics, in management studies and in staff work. The level of instruction, on an individual basis, can be as high as the student dictates. Educational limits are self-imposed.

The third of Maj. McMichael's reasons was "elimination of these officers . . . would increase the number of slots." Ninety-seven slots out of over 900 is about 11 percent. The author argues that the resident course is a "quality cut"; that means in the combat service support branches, the top 97 officers are selected to attend.

Substituting the nonselectees of combat arms/combat support branches (those who did not make the cut) for the top combat service support branch officers lowers the overall CGSC quality, if one were to follow his logic. This certainly is not one of Maj. McMichael's goals.

Furthermore, the additional 97 slots would have a marginal positive impact on the combat arms/combat support branches, whereas a total loss of spaces for combat service support branches would have a significant adverse impact on those branches.

As for the notion that discrimination, in this case, is good and would not reduce the opportunities for success and advancement, I say nonsense. For the author, on one hand, to say the education is not needed for combat service support officers and then, on the other hand, suggest that the "shortfall . . . could be made up in two ways . . . " is a blatant contradiction. If it's not needed, why make up a shortfall?

Excluding combat service support officers from the college degrades their standing in the Officer Corps. The proposed policy is prejudiced, parochial and extremely shortsighted. Acceptance of such a policy would be disastrous to the U.S. Army.

James J. Watkins
Indianapolis, Ind.

Misplaced Blame

■ I wholeheartedly agree with Lt. Col. Albert N. Garland's views ("Back to Basics," "Letters," November 1984) concerning Lt. Col. Wesley A. Groesbeck's "School Day Tough on Esprit" ("Cerebrations," July 1984). I recently completed the most rewarding job I've ever had in my 35-year Army career as the commandant of the Soldier Support Institute.

The writer is absolutely correct concerning the problem of junior, inexperienced officers teaching from the platform. My instructors were fine, outstanding officers who simply lacked experience. At one point in time, 50 percent of my officer instructors teaching officer advanced courses had not been to the advanced course themselves. Yes, that is deplorable, but Col. Garland, I'm afraid you didn't do your homework.

You blame the Army's Training and Doctrine Command (TRADOC) for the dilemma. No way. The officer distribution plan (that is, distribution of the shortages) emanates from Department of the Army, not TRADOC. Please, in the future, point your finger in the right direction.

In my opinion, Gen. William R. Richardson, the current TRADOC commander, has done more for the Army education system than any other senior officer I know. He's taken the schoolhouse out of the "touchy-feely—do your own thing" world and put it back right where it belongs: hardcore, back to basics soldiering; learn to survive in combat, then learn your branch skills mode. I'm grateful for what he has done and would proudly serve under him anytime.

Col. Lawrence N. Brockway Jr.
St. Louis, Mo.

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Easing Trauma of Separation

Humanize Nonselection Process

By Col. Jamo C. Powell

The Army takes care of its own. That motto is widely used and, I believe, generally true.

Lately, however, I have seen instances where some very deserving soldiers are not being properly cared for—at least not as well as they should be. These are the soldiers involuntarily released from active duty because they have failed to be promoted. Some, of course, do not deserve promotion and their separation is in the best interests of the Army.

Front & Center

Conversely, many of those being separated are dedicated, productive soldiers whose only failure in an "up or out" environment may be one or two below par efficiency reports, often written early in their careers. Based on personal experience, I find that most of these soldiers perform their duties outstandingly during their final years of service—even during the last several months when one might expect their enthusiasm and motivation to flag.

It is not my purpose here to argue that these soldiers should not be separated. In an era of intense competition for promotion, only those with the best performance records should be promoted. Those whose records come up short (even if only marginally so) are the obvious choices to miss promotions when constraints preclude promoting all who are eligible. Further, our promotion board system does a credible job of identifying those most deserving of promotion, within the bounds that a records review inherently imposes.

My concern is that we cast these soldiers out (some with severance pay, to be sure) in an unnecessarily cold-blooded and insensitive manner. At the unit level, a farewell luncheon may be held in their honor. We may even go so far as to recommend the most deserving for an Army Commendation Medal or Meritorious Service Medal for their 12 or so years of service to the nation. But as the *Army*, we do little to prepare them for the bombshell that has just exploded in their lives.

They are notified in writing in a businesslike manner that they will not be promoted and that they have six months to get their affairs in order; no appreciation for their service and no apparent concern for their transition to civilian life is expressed.

All of us fortunate enough to make our promotions should understand that the "separatee" is generally deeply disappointed, embarrassed, even bitter. And while a few might sincerely subscribe to the "every problem is really just an opportunity" theory, the average person is bound to be extremely concerned about starting a new career, about how his lifestyle may change and about how well he will cope.

The Army should do what it can to support the separatee and his family during their final months of active service and help smooth out their transition to civilian life. A good place to begin is to try to restore his sense of confidence in his own ability. Nonselection does not mean that the individual is incompetent, unprofessional or even ineligible for promotion.

Without question, the difference in quality of those just above the cutoff point for promotion and those just below must be minimal. In fact, with the requirement to promote a certain minimum number from a particular military occupational specialty, it is possible that the people not selected may have better records than some who are.

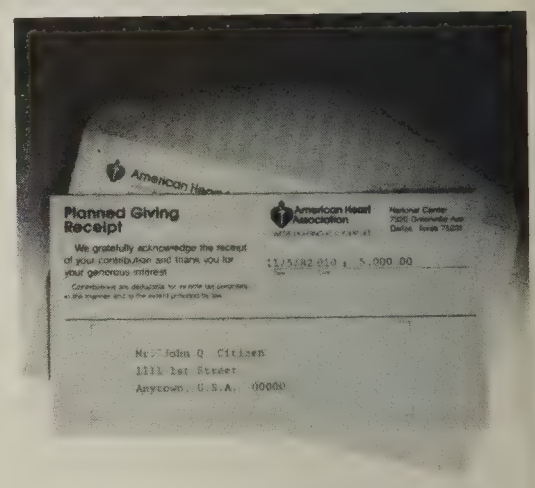
The separatee will probably leave the Army with some of the following skills and attributes:

- He knows how to deal with responsibility and has handled positions of responsibility well in the past.
- He is a leader. He has more than an average ability to influence others and he knows how to deal with people.
- He is a manager. He can manage men, material and time efficiently and effectively. He gets the job done with what he has.
- He is educated. He has at least as good a formal education as the average civilian; in most cases he is better educated, both formally and informally.
- He is loyal, disciplined and understands the need for teamwork. He fits in well anywhere because he is adaptable and flexible.
- He has personal integrity.

As professional soldiers, we take these attributes for granted because they are essential to our profession. I suspect, however, that employers find relatively few candidates for managerial positions who possess these character traits to the same degree as experienced former soldiers.

In sum, the average separatee probably has a lot going for him—whether he

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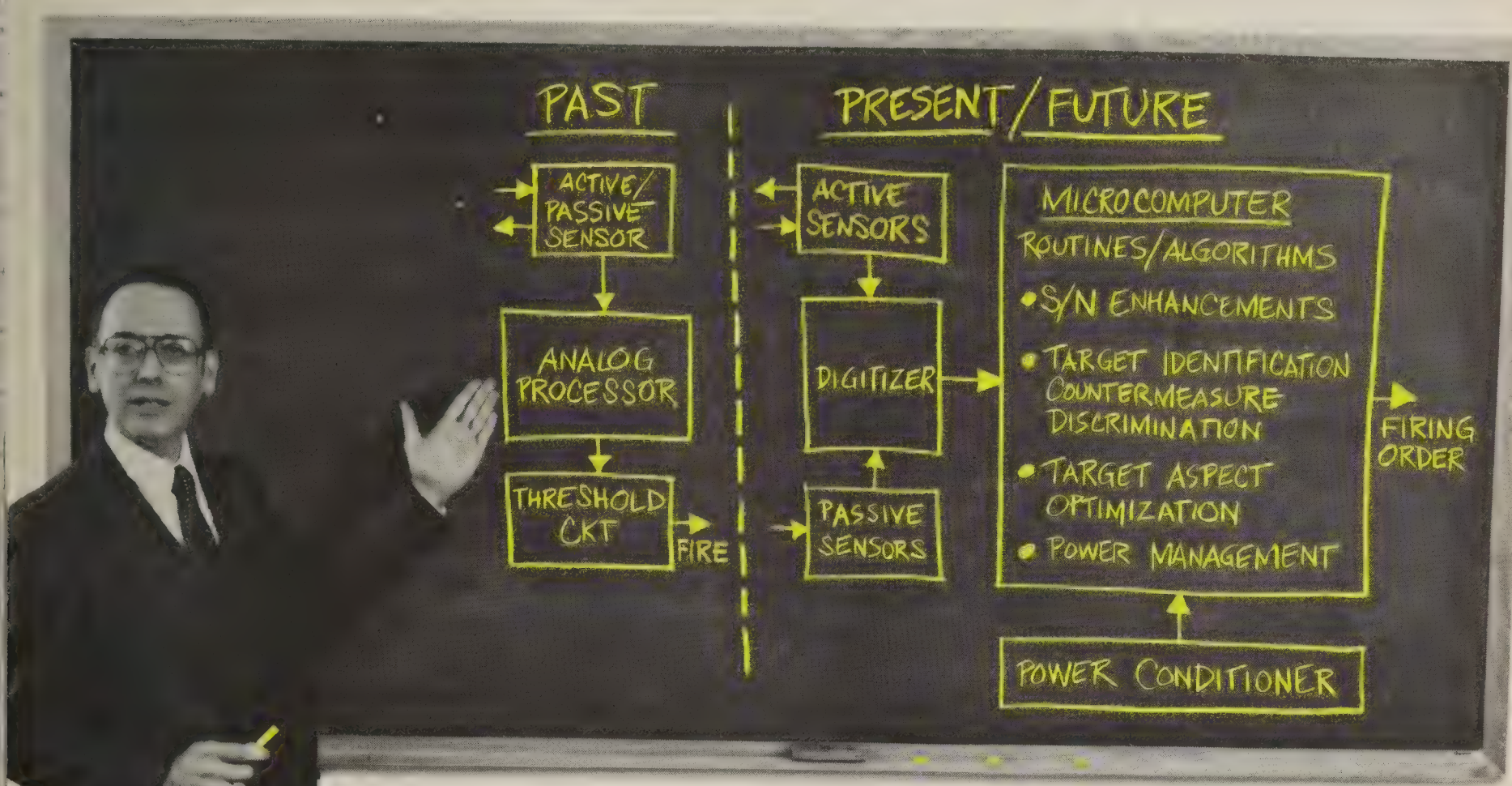
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Leadership in Technology

leaves as an infantryman or a computer specialist. He may even find he is in great demand.

It is hoped that he will draw these same conclusions about his abilities and potential himself; if not, I think his superiors are obliged to help him do so. A sense of self-confidence is essential to any successful transition to life outside the Army.

Something tangible should be done at the departmental level to recognize the separatee's contribution in the service of his country. I suggest a certificate of appreciation signed by the chief of staff or the secretary of the Army.

Such a document would take some of the sting out of the impersonal nature of the separation notification process and, I think, would be sincerely appreciated. Surely an appropriate certificate could be devised that would get the job done, yet not compete with or depreciate the certificate now awarded to soldiers who qualify for retirement.

Obviously, not every separatee should receive a certificate. Those whose separation is clearly the result of misbehavior or incompetent duty performance forfeit any right to special recognition. The promotion board could probably be counted on to identify those who do not deserve a certificate.

There are two times when it is important to pay special attention to the needs of the soldier—when he first arrives at a new assignment and when he departs for the next. These are the times when he and his family are most vulnerable. The soldier being separated from the Army after years of good and faithful service deserves that special attention also.

Appropriate recognition at the departmental level for that service would be a fitting way to demonstrate that the Army really does appreciate and take care of its own. □

COL. JAMO C. POWELL holds a master's degree in business from Tulane University and has served in the Office of the Deputy Chief of Staff for Personnel and as a division G1 in Germany. He is now chief of the Readiness Group, Ft. Devens, Mass.

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The Editors

Developing Wartime Leaders: A Peacetime Army's Challenge

By Maj. Roger Cirillo

Karl von Clausewitz's *On War* contains the following statement, which merits a close look:

> Any complex activity, if it is to be carried on with any degree of virtuosity, calls for appropriate gifts of intellect and temperament. If they are outstanding and reveal themselves in exceptional achievements, their possessor is called a "genius."

Reading further, we note than Gen. von Clausewitz sees the essence of genius as the combined "gifts of minds and temperament" bearing on military activity. Though he appears too philosophical for many, these particular words offer some insight into a peacetime army's perennial problem—how to identify and develop the higher level leadership needed in wartime.

Not every army is blessed with full-blown geniuses already gripping their marshals' batons. The Napoleons, Turennes and MacArthurs bore the marks of a special talent from their earliest days. Military writer Col. Trevor N. Dupuy, U.S. Army, retired, would have us believe that the Germans institutionalized such excellence, that the Schlieffens and Mansteins of that army were logical extensions of their general staff system. The "institutionalization" of military genius, however, always takes on a uniquely national flavor.

Throughout its history, the American army has nurtured its future leaders by the hard test of continued excellent performance. Garrison duties interspersed with irregular periods of wartime assignments tested the early generations of officers. Since World War I, formalized education from branch basic courses to senior service colleges has been a permanent fixture, but selection to the highest of these schools has always been based on duty, not mere academic performance.

Additionally, academic performance has rarely blinded seniors to the need for exceptional duty performance in the field. Some may point to Dwight D. Eisenhower's exceptional performance at Ft. Leavenworth, Kan., as an indicator, but note also that the key command figure in the Kasserine Pass disaster also graduated from the same school with honors.



Before World War II, officers soldiered hard, but the vagaries of routine jobs and the lack of opportunity to serve in high-visibility jobs requiring exceptional talent allowed performance to be noted in terms fatal in a modern efficiency report. In later days, with the beat of war drums, many formerly nondescript achievers could be found among the brightest of the Army's starbearers.

During the Army's first hundred years, many could have predicted Robert E. Lee's aptitude for battle command, but what of his opponents? Nearly a century later, then-Secretary of the Navy Frank Knox, writing to Adm. Chester W. Nimitz concerning flag officer selections, offered this observation:

> I presume most of us, if we had been required to choose at the beginning of the war between the brilliant, polished, socially attractive [Maj. Gen. George B.] McClellan and the rough, rather uncouth, unsocial [Brig. Gen. Ulysses S.] Grant, would have chosen [Gen.] McClellan, just as [President Abraham] Lincoln did.

The predictable Maj. Gen. McClellan however, failed. Secretary Knox was admonishing Adm. Nimitz to promote aggressive fighters, not the peacetime stars as Gen. McClellan had once been.

The twentieth century saw most of the top jobs going to the conventional handicapper's choices: Gens. John J. (Black Jack) Pershing, George C. Marshall and Eisenhower. Gen. Pershing's record in war and peace would have been hard to beat prior to 1917. As commander of the American Expeditionary Force in France in World War I, he merited a bright place with the Army's immortals, although his battlefield generalship lagged by the standards of many in the later days of 1918.

Gen. Marshall functioned as an "organizer of victory." His genius, however, was executive. His battlefield leadership was never tested. Gen. Eisenhower's contribution as coalition commander has never been surpassed, but his skill as arbiter, honest broker and strategic overseer clouded his battlefield influence.

The game over, various team members each claimed to have been the most valuable player, asserting falsely that the coach had done little. Always an organization man, "Ike" claimed to the end that the victory was a team effort.

At lower levels of that war, many of the fighters rose from the ranks of those languishing in lesser jobs. Maj. Gen. John S. Wood had been a professor of military science and tactics for nine years as war approached. Later, his dash across France at the head of the 4th Armored Division placed his combat commandership in a special category. When Gen. Wood was replaced, his more colorless, conventional corps commander described



him as "high-strung, inclined to be opinionated . . . an energetic developer of a high state of morale within his command."

Although professionally unflattering, that report identified the bedrock of Gen. Wood's command personality. A strong leader, he was not an easy subordinate. A German captive once typed him "the American Rommel." The description was apt both tactically and personally. Field Marshal Erwin Rommel, too, was tough to handle and had also been shunted aside in peacetime to train cadets.

The gruff, bumptious types also included Maj. Gen. Terry de la Mesa Allen, Maj. Gen. Ernest N. Harmon and Brig. Gen. Teddy Roosevelt Jr. At regimental level, Col. "Paddy" Flint also reached legendary heights. Both Gen. Roosevelt and Col. Flint died in Normandy, but the postwar army held no exalted places for a Harmon or an Allen. Not surprisingly, their wartime leader, Gen. George S. Patton Jr., was cooling his spurred heels in a paper command in Europe when he died as the result of an accident at the end of 1945.



"I used to cuss a lot—but I guess they didn't count it against me."

Gen. Patton, too, had been saved from professional obscurity by an expanding Army in 1941. He was the Army's master of operational art, but the same characteristics that often brought battlefield success made it impossible to place him in a job at war's end.

The Army Air Force also had its successful problem children. Highest on their list of noncomformist successes was Maj. Gen. Claire L. Chennault. Gen. Chennault's "Flying Tigers" were expanded from a single fighter group in 1942 to become the Fourteenth Air Force by 1943. Although possibly the smallest major air command of World War II, it also proved to be the most successful in terms of damage inflicted versus actual losses.

Gen. Chennault retired for "medical reasons"—actually the logical end to a career highlighted by controversy and open rebellion against the flying service's doctrine of bomber superiority. His fighter ideas were proved correct, but his doctrinal heresy and combative personality still rankle some air force minds.

The creative versus the conventional in military history is not a new conflict. Several books argue the merits of nonconformers as the best combat commanders. Too many exceptions exist, however, to easily write off men who excelled first in peacetime service and then in wartime. If World War II had its Allens, Chennaults and Woods, so, too, did the fighting ranks include the J. Lawton (Lightning Joe) Collins and Matthew B. Ridgways.

But if both types were successful, what of the peacetime selection process? Peacetime brings heightened expectations and sometimes myopic views on professionalism. Shiny belt buckles and the ability to look good seem to the cynic to supplant a deeper professionalism. A man's dedication to the profession of arms, his knowledge and ability are not always perceived in short glimpses by a superior. The loyalty of candor is often mistaken for rebellion.

Looking after and developing subordinates can be viewed differently from afar. The courage to underwrite a subordinate's honest mistakes and to allow juniors to command without detailed supervision likewise is honored as much in the breach as in the practice. If quarterly command statistics do not lie about a unit's efficiency, likewise they do not adequately portray the command atmosphere and fighting ability of its leaders.

If the old Army had its faults, it did have one strong point. Its small size allowed it to judge its men more closely. No doubt its logistics and administration were simpler, but it was a good chooser of men.

If the Grants, Harmons, Woods, Flints, Chennaults and even Pattons of past days

had a single characteristic, it was their own infectious fighting spirit. In no small way, that last report on Gen. Wood mirrored their collective personalities, and the personalities of many a strong combat commander: "high strung, inclined to be opinionated . . . an energetic developer of a high state of morale within his command."

All possessed that brand of genius defined by Karl von Clausewitz—even if it sometimes seemed to the more timid or shallow judges to be an errant genius. □

MAJ. ROGER CIRILLO, a former armored cavalry troop commander, serves with the Combat Studies Institute at the Army's Command and General Staff College, Ft. Leavenworth, Kan.

New Approach Needed

The Problem of Alcohol Abuse

By Col. Richard B. Stuart

The Army seems to be completely baffled in its attempts to control the problem of alcohol abuse. Army Chief of Staff Gen. John A. Wickham Jr., in the June 1984 ARMY, referred to "Army policies and programs to eliminate alcohol-related problems." Yet go to any installation commander's review and analysis briefing, and chances are the driving-while-intoxicated (DWI) statistics will still be at worrisome levels, regardless of how severe the measures instituted to eliminate the problem.

Skilled and dedicated soldiers of all ranks are constantly being picked up DWI, and although these may be "isolated incidents" and not symptoms of alcoholism, the soldier nonetheless must suffer the severe and possibly career-damaging sanctions of having his driver's license suspended and getting a letter of reprimand from the installation commander.

In the United States as a whole, the social costs of alcohol abuse are staggering: *Consumer Reports* estimates the costs of problem drinking from accidents, crime, damaged health, lost productivity and early death exceed $43 billion annually.

Alcoholism is an enormous public health problem, afflicting ten percent of all adult drinkers. The medical problems of alcohol abuse are legion. Alcohol, a powerful depressant, adversely affects the brain, liver, stomach, esophagus, heart, pancreas, peripheral nerves and bone marrow.

Intoxicated soldiers often seriously injure themselves. One study showed that 40 percent of those people who suffered brain concussions were drunk when the injury occurred.

In El Paso, Tex., William Beaumont Army Medical Center's busy emergency room in one recent 25-day period reported 51 soldiers were seen with medical and surgical problems caused by or associated with drinking (five percent of the active-duty personnel seen for all causes in the emergency room) and were referred to the local community counseling center.

Research is demonstrating that even small amounts of alcohol can be harmful. Animal studies have shown that synthesis of protein in the brain is inhibited by alcohol. Brain scans of social drinkers have demonstrated some shrinkage of brain tissue, and neurological and psychological tests showed some mental impairment in men with a history of drinking just four to six drinks at any one time.

Researchers in Australia say evidence is accumulating that regular consumption of two to three drinks a day (of 86-proof beverage) by men and one to two drinks by women may result in cerebral damage. Fortunately, these studies also show clearing of the abnormalities after abstinence.

In March 1984, the *New England Journal of Medicine* reported that a similar low level of drinking appears to be associated with development of cirrhosis of the liver and quoted a recent Japanese study which showed an increased risk of lung cancer in whiskey drinkers and of rectal cancer in beer drinkers who have no more than two or three drinks a day.

How is the Army trying to control the problem? It is attempting to limit the supply of alcohol and to use regulations, social engineering, treatment of alcoholics and education as solutions. The supply is controlled, where possible (as in overseas areas), by rationing hard liquor —but there are also beer and wine alcoholics. The drinking age is set as high as possible and an effort is being made to make it 21 years of age nationally. Regulations require counseling and suspension of drivers' licenses for driving while intoxicated.

It is a Uniform Code of Military Justice offense to be drunk on duty (defined as having a blood alcohol level of 0.5 milligrams per 100 milliliters in Army Regulation 600–85). On most posts, during long holiday weekends at least, the military police will give a ride home to a driver who finds himself too drunk to drive.

Treatment of alcoholics is ongoing at many Army hospitals, including major residential treatment facilities at several hospitals and medical centers such as William Beaumont Army Medical Center, but this only occurs after alcoholism has become established. Although abolition of post "happy hours" has meant some increase in the price of alcohol, without taxes the price is still lower than it is off post.

Finally, education is stressed—the usual solution to most of our social problems. Army Regulation 210–65 says the goal is to develop "responsible" drinking behavior, which is difficult to define. The Department of Defense says each military service "shall provide drug and alcohol education that focuses on intoxicated driving." What is there to teach, except "don't do it"?

Army leaders should start encouraging soldiers not to drink at all, and should start emphasizing that it is acceptable to be a total abstainer; that, indeed, abstinence is a praiseworthy position to take, that it is not deviant behavior to be ridiculed. After all, the latest surveys show that a full third of American adults never drink.

Abstinence would solve the problem of being unexpectedly waylaid by the police when a driver has had "just one too many" and losing, as a result, his driver's license and sustaining serious damage to his career. By totally abstaining, the nondrinker avoids the brain damage alcohol causes, and an abstainer will, of course, never become an alcoholic. Since there are still no tests to predict who will become an alcoholic, it would seem foolish to expose oneself voluntarily to a chemical that has a ten-percent rate of addiction.

Abstinence is clearly in tune with the Army's and the nation's drive toward "total fitness," to include optimum physical and mental functioning. It would promote "readiness," the key word in the Army today. After all, every soldier is on duty 24 hours a day, as was stressed by Sergeant Major of the Army Glen E. Morrell who, in the October 1984 ARMY *Green Book*, called soldiering "a 24-hour-a-day profession" ("Hard Work, Leadership Still Keys to Quality").

If illegal drugs are prohibited because we want soldiers to be alert to their duty, should not alcohol also be regarded as a chemical to be left alone? One way to truly deglamorize alcohol is to denounce it as a liquid too dangerous to drink and a tranquilizer too hazardous to handle even in controlled social settings.

Alcohol-free social functions are held with increased frequency on some college campuses. *U.S. News & World Report* 13 June, 1983 ("Colleges Put a Cork on

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Campus Drinking"), reported that the University of Wisconsin is urging fraternities and sororities to hold "dry rushes" when they recruit new members. The University of Santa Clara, Calif., has a social club called STOP (students tired of partying), whose members take part in alcohol-free entertainment instead of beer parties. The University of Illinois held an "alcohol awareness week," which included advice on "natural highs" such as jogging and yoga; they also have "fruit juice Friday" at the student union.

There will, of course, be counterarguments. Some may worry that encouragement of total abstinence means the prohibition of alcoholic beverages, which it most emphatically does not. There is no taint of prohibition about a soft-sell encouragement to join the more than 48 million adults (aged 18 and over) who voluntarily abstain from drinking alcohol.

The individual freedom of adults must be respected. Encouragement of abstention is an educational approach to the alcohol problem, one that is easily taught, readily understood and simple to follow.

In recent years drinkers have been heartened by reports that the moderate use of alcohol (two or three drinks a day) might help prevent coronary artery disease by elevating blood levels of the protective type of cholesterol-transport chemical known as high-density lipoprotein (HDL).

However, more recent research has shown that moderate drinking elevates the wrong kind of lipoprotein, not the protective one. Also, even moderate drinkers continue to run the risk of developing alcoholism.

Another argument that has been made against abstinence is that some studies have indicated that people at high risk of developing alcoholism are not only children of alcoholics, a well-known association, but also those whose parents are strict abstainers, according to *Consumer Reports* (July 1983).

However, those studies were done many years ago in criminal populations, and more recent studies reported by the National Institute on Alcohol Abuse and Alcoholism (1978) generally agree that adolescent drinking behavior is learned, primarily from parents. One study found that 72 percent of parents who abstain have children who abstain.

Is an abstainer in the Army likely to be subject to ridicule and shunned as a pariah? I have never observed it during my 27 years of active duty: I have never drunk alcohol and no one has ever questioned my preference for soft drinks at social affairs, nor have I ever observed anyone else being reproached for it. If abstinence became widely recognized as preferred behavior in the Army, there would be no fear of such negative encounters.

How can the Army encourage abstinence from alcohol in the force, especially in younger soldiers who are in the process of developing their social practices? There are several ways:

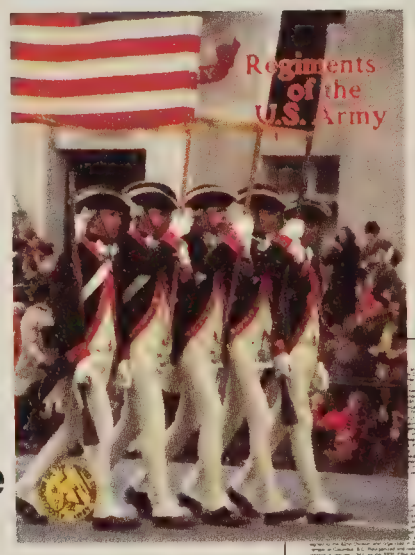
- Have senior Army leaders who are abstainers openly proclaim and defend their positions, and demonstrate that it has not hurt their careers. Respected leaders' examples can powerfully influence their subordinates.
- Identify historical Army figures who were known to be abstainers, yet were highly respected combat leaders: Confederate Lt. Gen. Thomas J. (Stonewall) Jackson comes to mind.
- Quote contemporary public figures with whom young soldiers can identify to promote abstinence, as President Reagan lauded singer Michael Jackson as "proof of what one person can accomplish through a life-style free of alcohol or drug abuse." We must somehow demolish the idea that drinking symbolizes a rite of passage into adulthood.
- Develop some reward system for soldiers who abstain. Perhaps some sort of fitness ribbon or badge could be developed, with an alcohol abstinence commitment as one element to justify the award along with tobacco abstinence, adherence to weight standards and passage of a certain number of physical readiness tests.
- Promote alcohol-free social events where many other types of drinks are available.
- Have alcohol-free beverages on the table as well as wine at "dining ins" and similar functions so toasts will not have to be made with wine.
- Have beverage lists at military clubs include nonalcoholic drinks with as marked a variety as most wine lists have. Surely fruit juice concoctions can be made as attractive as the multitude of exotic alcoholic drinks served at most bars.

If alcohol abuse and the diseases, destroyed careers and damage to Army readiness it causes are to be eliminated, a new approach is called for. The Army should continue to discipline and treat abuse, insist on moderation and start to encourage abstinence. □

COL. RICHARD B. STUART has served as a family practice physician and as hospital commander of four Army community hospitals. He is now chief of primary care and community medicine at William Beaumont Army Medical Center, El Paso, Tex.

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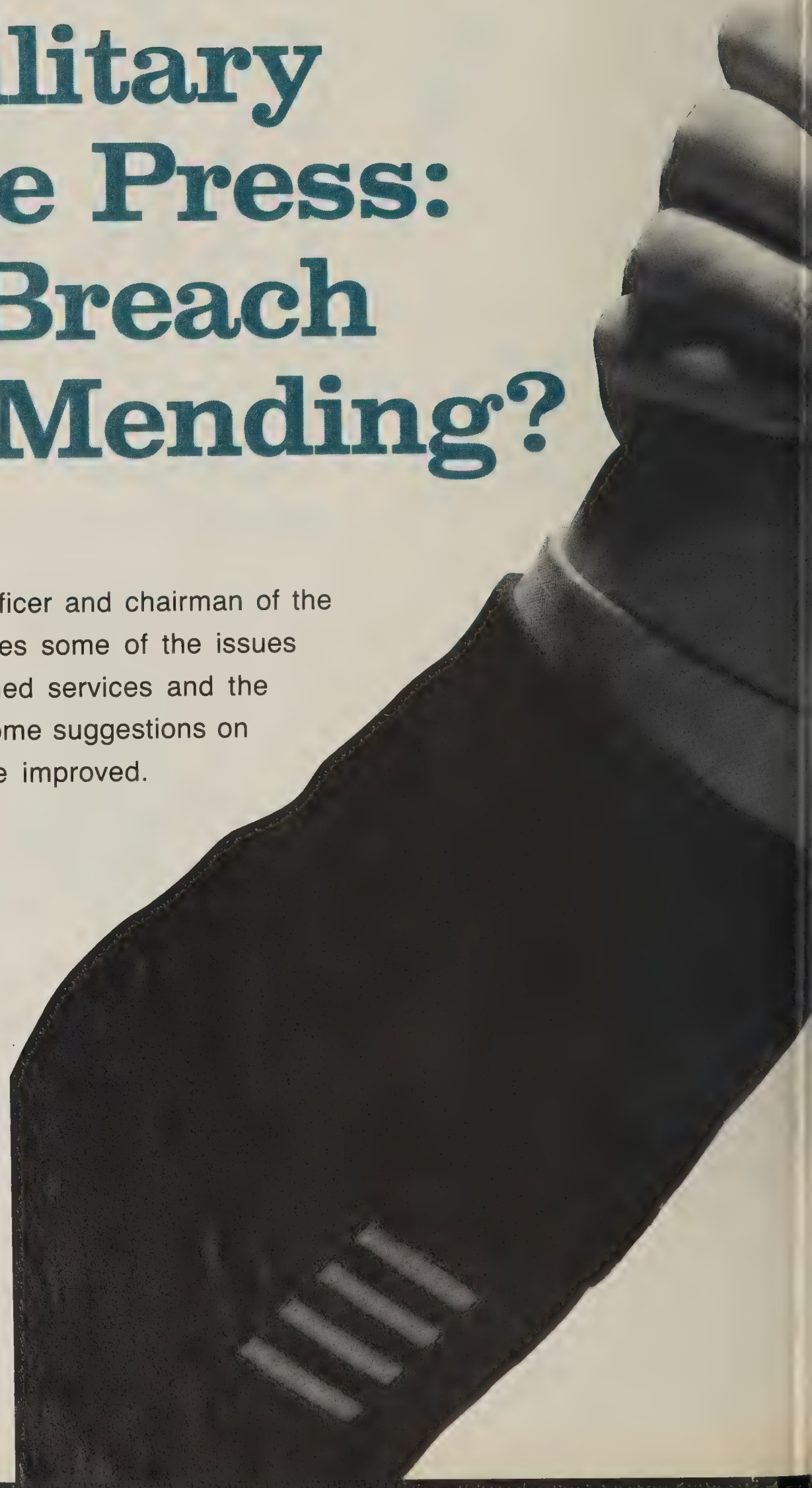
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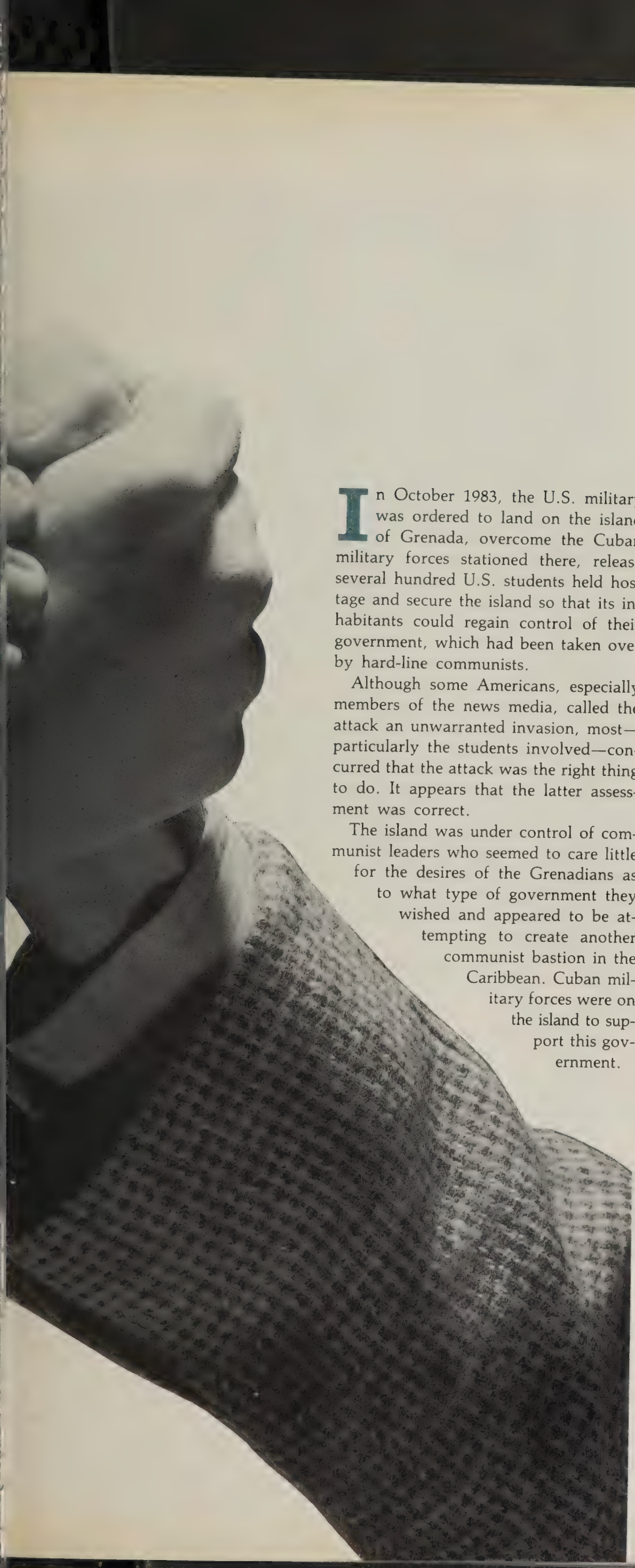
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The Military And the Press: Is the Breach Worth Mending?

A veteran public affairs officer and chairman of the Sidle Commission examines some of the issues that have divided the armed services and the news media, and offers some suggestions on how their relations can be improved.



By Maj. Gen. Winant Sidle
U.S. Army, retired



In October 1983, the U.S. military was ordered to land on the island of Grenada, overcome the Cuban military forces stationed there, release several hundred U.S. students held hostage and secure the island so that its inhabitants could regain control of their government, which had been taken over by hard-line communists.

Although some Americans, especially members of the news media, called the attack an unwarranted invasion, most—particularly the students involved—concurred that the attack was the right thing to do. It appears that the latter assessment was correct.

The island was under control of communist leaders who seemed to care little for the desires of the Grenadians as to what type of government they wished and appeared to be attempting to create another communist bastion in the Caribbean. Cuban military forces were on the island to support this government.

Looking back, the biggest flap in connection with the Grenada operation resulted from the U.S. government's decision to keep representatives of the U.S. news media off the island for the first two days of the operation and, on the third day, permit only a 15-person press pool to report what was taking place on the island.

Members of the news media raised considerable furor over being barred from covering the operation. In fact, the freeze on news coverage received attention in most media that seemed to those of us who live far from the seat of government equal to that of the military operation itself. However, much to the surprise of many, especially the media, public opinion appeared to endorse strongly the government's action in barring the press. Various polls showed what appeared to be massive public support for keeping the media out of Grenada for the first two days of operations.

This support lessened as the days passed and the American public had time to think about the matter. By February 1984, at least one poll showed that a slight majority of those questioned felt that barring the press was a mistake.

In any case, as a result of the furor by the press, Gen. John W. Vessey Jr., chairman of the Joint Chiefs of Staff, in November 1983 asked me to convene a panel of experts to make recommendations regarding the question: "How do we conduct military operations in a manner that safeguards the lives of our military and protects the security of a military operation while keeping the American public informed through the news media?" He was speaking of future military operations to include major training exercises. He specifically did not ask for a postmortem on Grenada.

The original plan for this panel was to invite press membership from the major media umbrella organizations such as the

American Society of Newspaper Editors, the National Association of Broadcasters and the American Newspaper Publishers Association. Gen. Vessey sent letters to a number of these groups asking that they each provide a panelist. These media representatives would be matched by an equal number of panelists from the Department of Defense.

The initial reaction from the media was encouraging, but it soon became apparent that the media's lawyers were not enthusiastic. On 10 January, 1984, ten of the major news organizations, including both umbrella groups and individual news agencies, met in New York City to produce what was called "a statement of principle on press access to military operations."

This statement was forthcoming, but, in addition, the group made a decision that it was inappropriate from a conflict-of-interest standpoint for working reporters and editorial personnel to sit on a government-sponsored panel to make recommendations concerning future military-media relations.

This decision was unanimous among major U.S. news organizations, including the umbrella groups, and resulted in the revision of the plan so that the nonmilitary membership of the panel would be composed of experienced retired media personnel and representatives of schools of journalism who were experts in military-media relations. The Department of Defense organizations involved agreed to provide panel members at the outset.

Although the news organizations did not agree to put active journalists on the panel, they did agree to cooperate fully otherwise, to include providing qualified personnel to make oral presentations to the panel, with the exception of one major news magazine that preferred to be represented by its umbrella group.

Hosted by the president of the National Defense University, the panel met for five days in early February 1984, at Ft. McNair in Washington, D.C. The group was composed of five former newsmen experienced with television, radio, newspaper, news magazine and wire service operations during wartime.

One of the five was also a professor of journalism at a major U.S. university, one was a Pulitzer Prize winner, three had been bureau chiefs in Saigon, and one had headed a major network's worldwide television news operations.

The sixth nonmilitary member was the former dean of a major journalism school who had spent over 40 years dealing with military-media relations. Also on the panel were representatives from the Organization of the Joint Chiefs of Staff, the Office of the Assistant Secretary of Defense (Public Affairs) and each of the four military services. I served as chairman.

This disparate group's first meeting was a three-hour closed session. We then held 21 hours of open sessions and wound up with 11 hours in closed sessions.

The first session was surprising in that it soon became clear that the panelists agreed unanimously that despite the American public's initial lack of support for the media in the Grenada operation and irrespective of the lack of clear-cut court decisions with respect to the First Amendment rights of the media, the "American way" required that the media be permitted to cover military operations under most circumstances.

As a result of this agreement and after less than three hours of discussion, we adopted the following statement of principle:

> First Amendment rights of the media are a matter for the legal profession and the courts and the panel does not feel qualified to provide a judgment. In any case, we are already agreed that the U.S. media should cover U.S. military operations to the maximum degree possible



The command decision to bar reporters from covering the early phases of the 1983 Grenada invasion created controversy: Army Rangers at the Point Salines airfield.

MAJ. GEN. WINANT SIDLE, U.S. Army, retired, served as chief of information, U.S. Military Assistance Command, Vietnam, from 1967 to 1969, after which he assumed duties as the Army's chief of information. In 1974, he became deputy assistant secretary of defense for public affairs, a post he held until his retirement from the military in 1975 when he became AUSA's director of Regional Activities. He is now director of public relations for Martin Marietta Aerospace's Orlando operation.

consistent with mission security and the safety of U.S. forces. Our goal is to recommend procedures intended to facilitate this process.

After listening to 28 top-level news media leaders from 18 major news organizations and the top public affairs officers from the military services, and reading written comments from 24 news organizations and other experts, our support of this principle remained unchanged.

We continued to agree unanimously that the media should cover the great majority of military operations in order to play their role in informing the American people. We did exclude such top-secret-type operations as the Iranian rescue mission and the Son Tay raid during the Vietnam war.

It is clear then that the panel strongly supported the military working with the media. Since the panel finished its work, I have heard considerable military sentiment against this conclusion. Many Army personnel—active, reserve components and particularly retired—say the press cannot be trusted.

I am sure this sentiment grew when, in December 1984, a major newspaper broke a story about the classified load to be carried in the space shuttle shot early in 1985. In fact, a poll conducted in central Florida by the principal newspaper in the area showed about a five-to-one majority castigating the newspaper for breaking the story.

However, despite this antipress sentiment, logic fully supports the panel's statement of principle which, incidentally, is in consonance with the media relations principles stated publicly by most secretaries of defense and the principles issued in January 1984 by the ten news organizations mentioned earlier.

The fact is that in the United States the main source of information for the public is the news media. If the military wants to tell its story to the American public, it must do so primarily through the press.

True, there is some direct access by the military to the public via public speeches, television interviews, speech coverage and opinion–editorial pieces in various newspapers and magazines. But the impact of such direct access is minute compared to the daily coverage of the military by the media. In other words, media coverage is a must.

The military is required by tradition and practice to tell its story to the public. It is not a matter of decision by the secretary of defense or his principal subordinates nor is it a matter of decision by some top military man who is seeking publicity. The American public does have the right to know, at least in general, what its elected officials (and those they appoint) are doing, and this includes the secretary of defense and the secretaries of the military services.

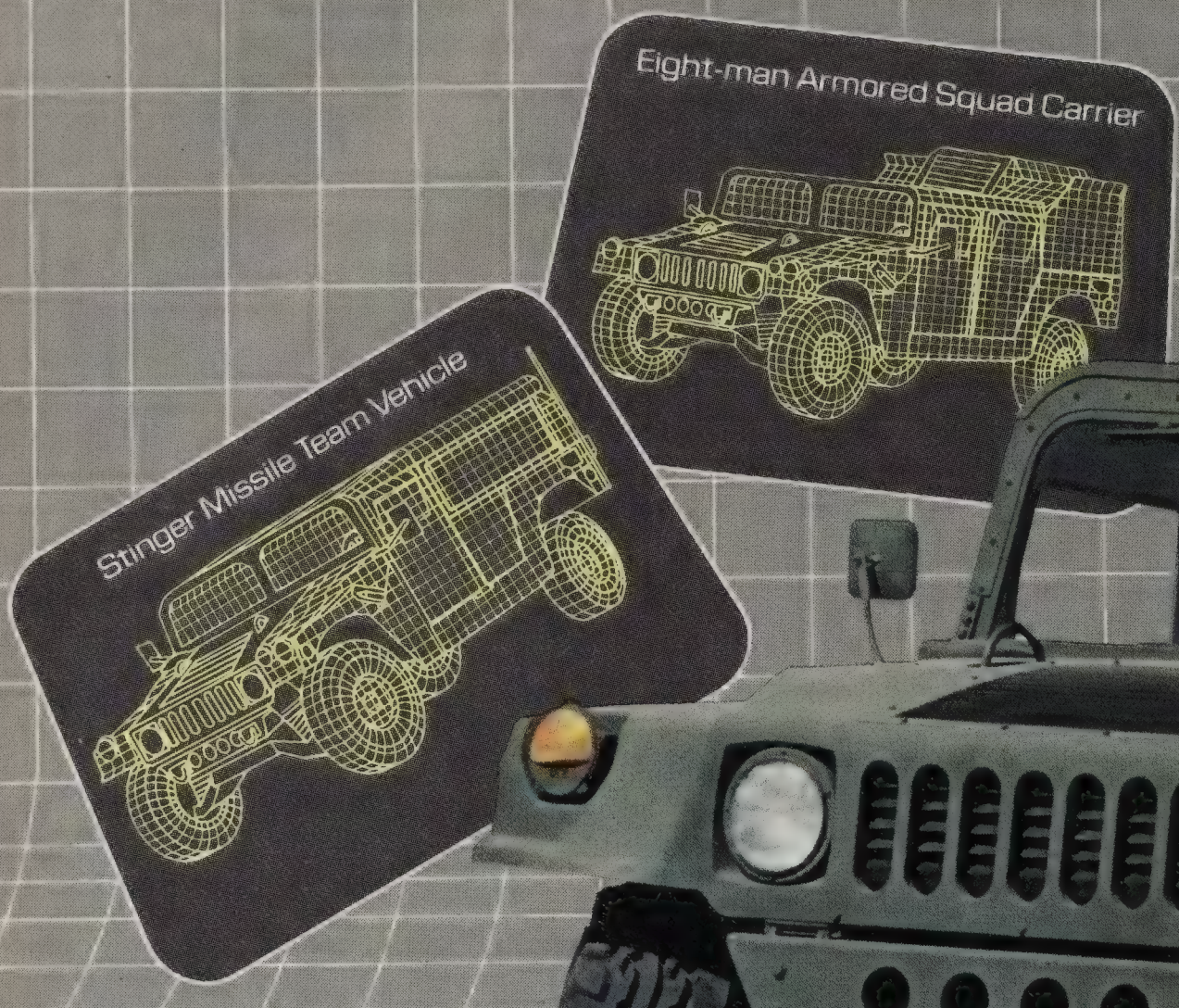
This principle may sound questionable to some, but just imagine what public outcry there would be if suddenly the Department of Defense decided that press queries would not be answered and reporters would not be allowed in the Pentagon. Obviously, such actions would not be acceptable.

In fact, the Pentagon already recognizes the need for national press coverage by providing office space, desks, telephones and other support for those reporters who cover the Department of Defense regularly.



Members of the Sidle Commission confer in Washington, D.C., in February 1984. Pictured from left to right are: Capt. James Major, U.S. Navy, J3 Office, Organization of the Joint Chiefs of Staff (JCS); Col. George Kirschenbauer, U.S. Army, J3 Office, Organization of the JCS; A. J. (Jack) Langguth, professor of journalism, University of Southern California School of Journalism; Capt. Brent Baker (partially hidden), *U.S. Navy, assistant chief of information (operations), Department of the Navy; Scott M. Cutlip, former dean, Henry W. Grady School of Journalism and Mass Communication, University of Georgia; Maj. Gen. Winant Sidle, U.S. Army, retired, chairman of the panel; Maj. Fred C. Lash, U.S. Marine Corps, chief, media branch, Office of Director of Public Affairs, U.S. Marine Corps; Billy Hunt* (partially hidden), *chief plans officer, Office of Chief of Public Affairs, Department of the Army; John T. Halbert, assistant director of public affairs, Department of the Air Force; Richard S. Salant, president, National News Council, former vice-president, news, Columbia Broadcasting System; Barry Zorthian, senior vice-president, Gray and Co., former vice-president, TIME Inc.; Keyes Beech, retired war correspondent and Pulitzer Prize winner; Wendell S. Merick, retired war correspondent. Not pictured is Col. Robert O'Brien, U.S. Air Force, deputy assistant secretary of defense for public affairs.*

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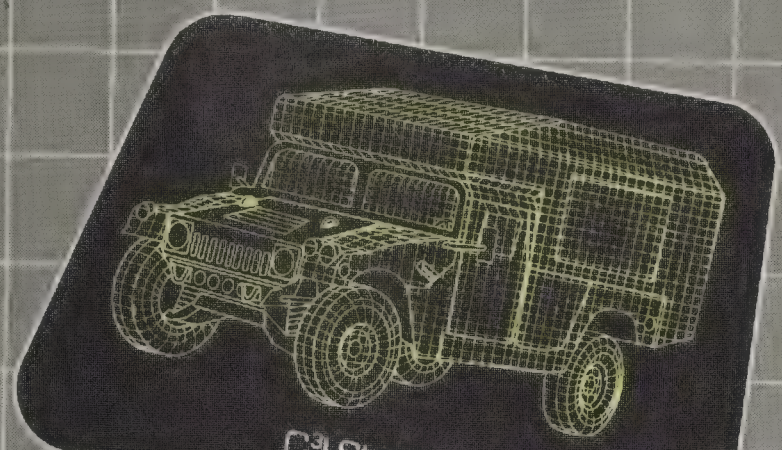


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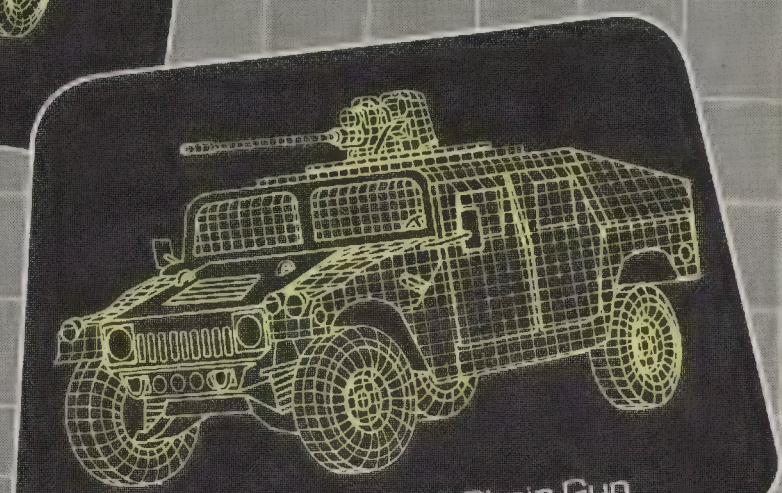
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In other words, the military must tell its story to the public. To do so, it must put aside any prejudice against the media even though some is well-founded, particularly on the part of those officers and enlisted men who recall the all-too-often negative or misleading coverage of Vietnam, especially at the time of the 1968 Tet offensive.

This may be a hard pill to swallow. But, swallow it we must if we want the American public to know about the good job the military usually does. I strongly believe that it is possible to obtain good media coverage of the military, provided the military deserves it. I also believe that the military must cooperate with the media in order to obtain such coverage.

The reader at this point may be saying, "This guy is nuts. How can we get good coverage from the biased, liberal press?"

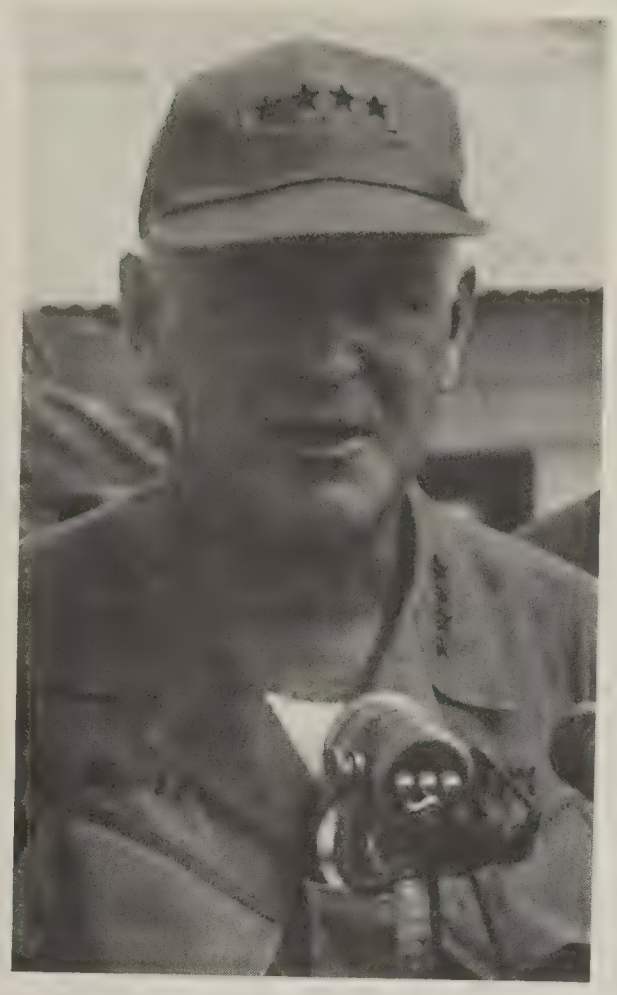
There is a way.

During the many years I spent in the information/public affairs business in the military, I worked with literally thousands of newsmen from many countries in both combat and noncombat situations. I think the record shows that I had at least some success as far as objective coverage was concerned.

About ten years ago, I was asked by an instructor at the Industrial College of the Armed Forces to analyze my dealings with the press and pass them on as lessons learned to a class studying public affairs. After considerable thought, I came up with a series of established rules or principles that seemed to work.

There is an old definition of public relations which says simply that effective public relations consists of "doing a good job and getting credit for it." I mention this to point out the importance of doing a good job if you expect to get credit for it. Military leaders are expected to do a good job and they almost always do; but if they do not do a good job, they should not get upset if unfavorable publicity results. Conversely, when they do a good job, they should get credit from the media.

Perhaps that was the major gripe concerning press coverage in Vietnam, the U.S. *Mayaguez* rescue operation, Grenada and other fairly recent instances. In Vietnam, the Army did not lose a single major battle. The victories did get some notice but they were all too often at least partially negated by sidebar discussions concerning the accuracy of the body count.



Gen. Creighton W. Abrams cultivated good press relations in Vietnam.

And, should some small Army outfit make a mistake, negative coverage was guaranteed.

I should add at this point that overall media coverage of the Vietnam war was not nearly as bad as most military men believe, despite what I have just written. Most of us tend to remember bad stories and forget the good or neutral ones. My personal complaint is that the U.S. military did not get sufficient and consistent credit from the media for its excellent combat performance. In any case, to have good press relations and the resultant positive coverage, the military must first do a good job.

Now, how does the military get credit for this good job via the news media? The first rule is to accept the fact that the news media are the principal means of telling the military story to the public. This means the military must work with the media; in fact, the military must let the media do this job for them. It is especially important that commanders accept this principle and that they ensure that their subordinates and staff officers accept it.

As part of accepting this principle, the commander must insist that his public affairs officer consider himself a representative of the press to the command as well as a representative of the command to the media. If the public affairs officer accepts this aspect of his job, he will consider the reporters covering his command his clients, not just a group of men and women who are trying to cause problems.

Needless to say, if these clients are at odds with the command on a particular story, the public affairs officer's loyalty is with the command. However, if he really looks on reporters as clients, he can minimize most cases of conflict with the press because he must work for acceptable compromises rather than just wishing that the news people would "get lost."

There are many advantages to recognizing the fact that the press is the conduit through which the military must tell its story. The vast majority of reporters will be more inclined to tell the military's side of a story after they recognize that the military is sincerely trying to cooperate—at any level.

At a minimum with such cooperation, news people will take the time to get the military's side of a potential negative news item stemming from anonymous tips, rumors, reports or actual unfavorable actions. In other words, they will be more inclined to check out a bad story before running it. On the positive side, they will also be more inclined to report on a good story.

The second rule is to "rest on your accomplishments." By this I mean do not brag about what you are going to do, avoid the hard sell and soft-pedal future grandiose plans (they usually do not work out as envisioned anyway). Instead, stress results. There is a tendency in the Pentagon, and at lower levels as well, to try to publicize new ideas before anyone actually knows how they are going to work.

A better solution is to concentrate on what is being done at the time or has just been completed, especially if the results can be seen. In such cases, invite the press out to see the story themselves.

Good examples abound. Poor press reports about the M1 tank were brought to an end by the simple expedient of taking the press out to see how the tank actually worked and letting reporters drive it and fire its weapons. In Vietnam in mid-1968, press criticism of U.S. pacification efforts and how the Tet offensive had set them back were stilled for many months by encouraging reporters to visit pacified provinces, particularly those that had formerly been largely controlled by the Vietcong.

One reporter, after driving all over a former Vietcong province alone and unmolested for a week, wrote a series of

positive stories about pacification progress that, in turn, generated similar stories by other reporters resulting from similar visits to other provinces. And, of course, most of the positive news coverage of U.S. combat operations resulted from stories by reporters who were on the battlefield, although there were some major exceptions.

Big publicity splashes about future plans may produce favorable coverage initially, but when the plans do not work out as advertised, the press can be critical legitimately. Another pitfall is trying to show great progress in some program before real progress is made. Commanders from the President on down must realize that this will not work.

Vietnam pacification is also a good example of this point. The Administration's demand in 1967 that pacification progress be shown resulted in reports, statistics and press briefings, all of which caused more caustic press comment since the progress depicted was more on paper than in fact.

The third and perhaps most important principle is not to be afraid to admit mistakes. This is vital whether or not any of the other principles are adopted. This is a difficult rule to follow, as human nature naturally causes most of us to want to keep our mistakes quiet.

But admitting mistakes is important to credibility and for letting the media know that the military is trying to provide facts, not eyewash. There is a small category —mistakes that when admitted publicly would result in a genuine breach of national security—that is exempt from this rule. The vast majority of mistakes should be admitted, however.

When Gen. Creighton W. Abrams took over as commander of the Military Assistance Command, Vietnam (MACV), in early 1968, the first message he sent to his commanders was what he called his "good news-bad news" message. This cable told his commanders to treat negative stories in exactly the same fashion as good stories; be sure the facts are right and then pass the information up the chain of command for dissemination to higher headquarters *and* the news media.

The message was to admit mistakes as well as seek recognition for accomplishments. Do not try to hide mistakes under the cloak of false classification when all that is really at stake is embarrassment. Simply admit the mistake, and be sure that higher headquarters know whether the subject matter is classified or not so that an informed decision on releasing it can be made. Mistakes are almost always uncovered eventually, even if there is a long delay. It is much better to admit them before they are discovered. Two reasons apply:

First, the delay in admission, whether calculated or inadvertent, opens up the matter to a charge of cover-up, and this always results in negative publicity and injures the credibility of the command accused. Second, a mistake, admitted quickly by the military (or anyone else for that matter), is less newsworthy than if it is discovered by a reporter. A mistake admitted before it is found out by the press tends to be a one-day story. If it is dug up by a reporter, it tends to run a lot longer on the front page.

The fourth and final principle is for the commander, his public affairs officer and any other appropriate subordinate commanders and staff officers to get to know personally the reporters who regularly cover the command's activities. The number of reporters involved will, of course, vary considerably depending on the level of the command and its location, but the principle applies in all cases.

It is especially important that, at a minimum, the commander and his public affairs officer follow this principle. Showing honest interest in the reporter almost



The armed forces did not always receive the credit due for their combat performance in Vietnam: Army infantrymen exit a helicopter during an operation in the An Lau Valley.

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Reporter Bill Hendricks (left) *of the Fort Worth* Star–Telegram *talks with mortar crewmen during a lull in Vietnam fighting.*

always results in more complete coverage of the command.

The reporter gets to know the commander, knows he is honest, knows he is trying to do a good job and how he is trying to do it. In most cases, the reporter on one side and the commander and his public affairs officer on the other will learn each other's strengths, weaknesses, prejudices and so forth.

Most important, in my experience, they will come to trust each other. This is vital for both sides. It is well worth the effort even in cases, normally rare, when the commander does not like the reporter. Getting to know the reporter should be done on a professional, not a social, basis. In many cases, social friendships do follow, but they must be established on a professional-to-professional basis initially.

Gen. Abrams was a master at making this principle work. He did not believe in press conferences or group "backgrounders" due to the normal variety of interpretations, misunderstandings and misquotes on the part of some reporters who participated. He did believe, however, in the importance of getting to know the reporters covering his command.

In Vietnam, his solution was to talk to as many reporters as possible on a one-to-one basis so as to minimize any misunderstandings and to permit both parties to learn about each other. In a normal week, he would spend a considerable number of hours with individual reporters. The meetings were usually scheduled for an hour, but almost invariably lasted longer, much to the dismay of the aides trying to keep Gen. Abrams on his daily schedule. These sessions were extremely helpful in generating objective coverage of the war.

Gen. Abrams talked to well over 150 reporters on this basis while he was commander, including those he saw more than once. I can recall no instance when a reporter came out of such a meeting with anything other than great praise for the general as well as a much improved understanding of what MACV was trying to do in Vietnam, and it showed up in the press coverage. Probably the most objective coverage of the Vietnam war occurred during mid-1968 to late 1969, and I am convinced that Gen. Abrams deserves much of the credit for this.

The advantages of adopting these four principles seem obvious. A reporter and a commander or public affairs officer get to know each other; the reporter trusts the military contacts because they admit their mistakes, try to help him do his job and do not try to foist off nonstories, inaccurate information or self-serving material.

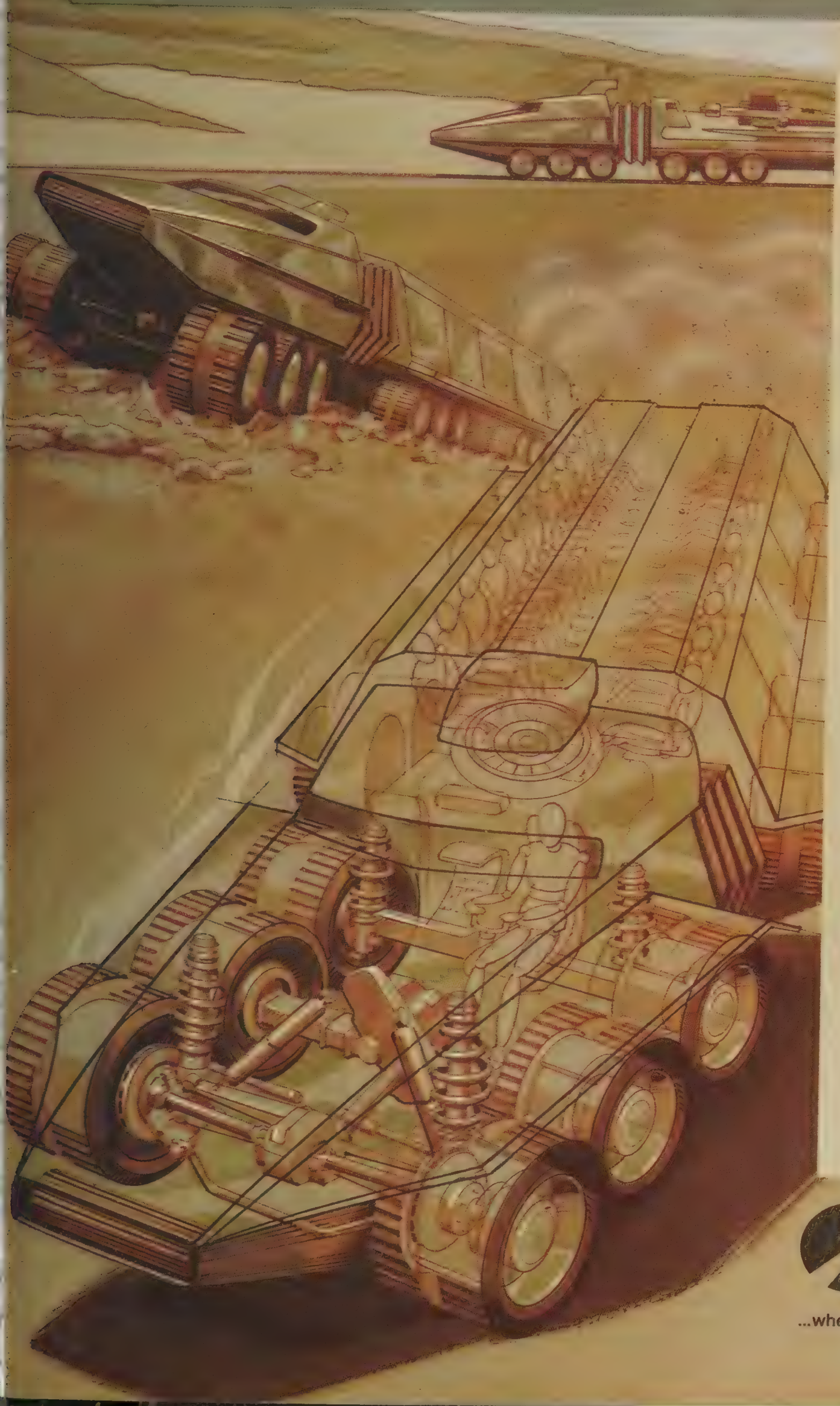
With this kind of a relationship, the command should get a fair break with the reporter's news agency, at least most of the time. In addition, the military will know which reporters can be trusted with sensitive information when necessary to understand a story, and the reporter will be loath to break a story that will do genuine damage to the national security of the United States.

Needless to say, the effectiveness of the four principles also depends on the sense of responsibility and the professionalism of the reporters concerned. Based on my experience, the great majority of reporters and their superiors exhibit both these qualities.

The Sidle Panel paid a lot of attention to the problem of the military working with the media and how they can work together effectively. The final comment in the panel's report is a good summary of the problem and the solution. It is worth repeating here:

> An adversarial—perhaps "politely critical" would be a better term—relationship between the media and the government, including the military, is healthy and helps guarantee that both institutions do a good job. However, this relationship must not become antagonistic—an "us versus them" relationship. The appropriate media role in relation to the government has been summarized aptly as being neither that of a lap dog nor an attack dog, but rather a watch dog. Mutual antagonism and distrust are not in the best interests of the media, the military or the American people.
>
> In the final analysis, no statement of principles, policies or procedures, no matter how carefully crafted, can guarantee the desired results because they have to be carried out by people—the people in the military and the people in the media. So, it is the good will of the people involved, their spirit, their genuine efforts to do the job for the benefit of the United States, on which a civil and fruitful relationship hinges.
>
> The panel believes that, if its recommendations are adopted, and the people involved are infused with the proper spirit, the twin imperatives of genuine mission security/troop safety on the one hand and a free flow of information to the American public on the other will be achieved.
>
> In other words, the optimum solution to ensure proper media coverage of military operations will be to have the military—represented by competent, professional public affairs personnel and commanders who understand media problems—working with the media—represented by competent, professional reporters and editors who understand military problems—in a nonantagonistic atmosphere. The panel urges both institutions to adopt this philosophy and make it work.

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Equipment Compatibility Problems Denigrate Readiness of Reserves

By Maj. Donald B. Skipper
and
Maj. John T. Fishel
U.S. Army Reserve

The Total Force policy of "One Army" is now complete. U.S. Army operations in Grenada proved, as nothing else could have, that we cannot conduct even a relatively small-scale contingency operation without reserve components participation. Thus, if deterrence were to fail, the reserve components would be called on to provide the necessary depth of military capability to win the next war.

In fact, the reserve components comprise over half of the Army's deployable force structure. The Army's heavy reliance on the reserve components for a wartime force structure and the Total Force policy adopted in 1973 have resulted in the reserve components assuming missions in the current Army strategy which are far more demanding than ever before.

Some of these units must deploy only hours after mobilization and none of the reserve components will have the luxury of months of postmobilization training, as has always been the case in the past.

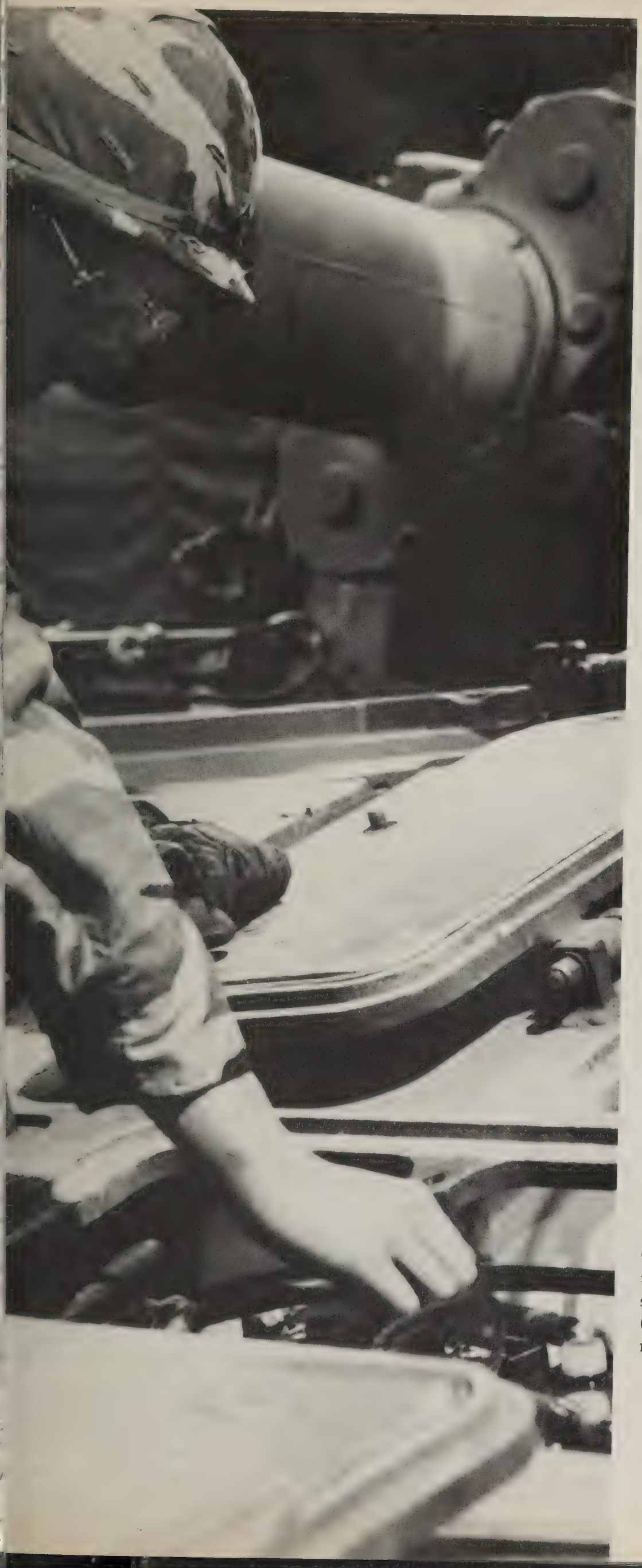
Training programs have been developed in the last decade to improve reserve components training and readiness and to facilitate peacetime training alongside their active-duty counterparts. The affiliation, partnership, overseas deployment training and key personnel upgrade programs are designed to better prepare the reserve components for their wartime mission.

Yet, the problem of equipment compatibility and associated operational capabilities threatens to denigrate the Total Force policy and hinder accomplishment of its wartime missions. As Sen. Strom Thurmond (R-S.C.) has observed:

> In sum total, one half of the nation's combat power and two thirds of the support capability are maintained in the reserve forces. Despite this heavy responsibility, the Guard and Reserve lack much of the modern equipment they need to mobilize and deploy as required. Changing these conditions is not only desirable, it is essential. We must keep these forces strong if our nation's ability to deter aggression is to be maintained.

The chart on Page 36, "Proportion of Army Reserve Components in Total Army Forces," indicates that the reserve components have approximately 70 percent of the Army's nondivisional maintenance capability. Yet reserve components equipment, while deployable, is generally not compatible with the equipment used by or stored in POMCUS (prepositioning of materiel configured to unit sets) for the active force.

A second and closely related problem concerns the reserve components maintenance personnel who are expected to re-



Despite the cruciality of their roles as integral members of the Total Force, the Army National Guard and Reserve face knotty challenges in training and fielding materiel that is congruous with such vital go-to-war aspects as prepositioned supplies.

pair modern equipment on mobilization. In its 1980 Reserve Components Status Report, the Association of the U.S. Army highlighted this problem: "Equally important is that reserve forces maintenance personnel train routinely on the equipment they will service on the battlefield as well as the [older] equipment in the hands of the Guard and Reserve."

The third reserve components problem with Army force modernization efforts concerns the equipment displaced from the active to the reserve components when the active force receives new equipment. From a reserve components viewpoint, displaced equipment is new equipment and often requires the same new equipment training (NET) effort that is normally required by units receiving new (recently manufactured) equipment.

Yet, neither the Army Materiel Command (AMC) nor Training and Doctrine Command (TRADOC) NET teams are usually available to provide onsite transition for displaced equipment training (DET). Gen. John A. Wickham Jr., Army chief of staff, has admitted that:

> The Army has tried to match increasing reliance on the reserve components with modern equipment. We've not done well enough in the past, but now we have programs that are firmly in place that will put modern equipment in the reserve components. We calculate, according to

these programs now, that we are sending roughly one billion dollars a year of new equipment into the reserve components. In addition, there would be several hundred million dollars of "trickle down" equipment that would come from replacement of older equipment in active units.

Thus, force modernization presents a three-part challenge to the reserve components. New and displaced equipment transition training, and systems training for those maintenance personnel who could logically be expected to service and repair new systems in wartime may be collectively termed "force modernization training" (FMT).

How big a problem does FMT pose to the reserve components? During the next six years over 80 new and displaced systems are planned for delivery to the reserve components. Some of these include the MI Abrams tank, M2 Bradley infantry fighting vehicles, Vulcan and Chaparral air-defense artillery systems, the M9 armored combat earthmover (ACE), new trucks and forklifts, and the decentralized Army service support system (DAS[3]).

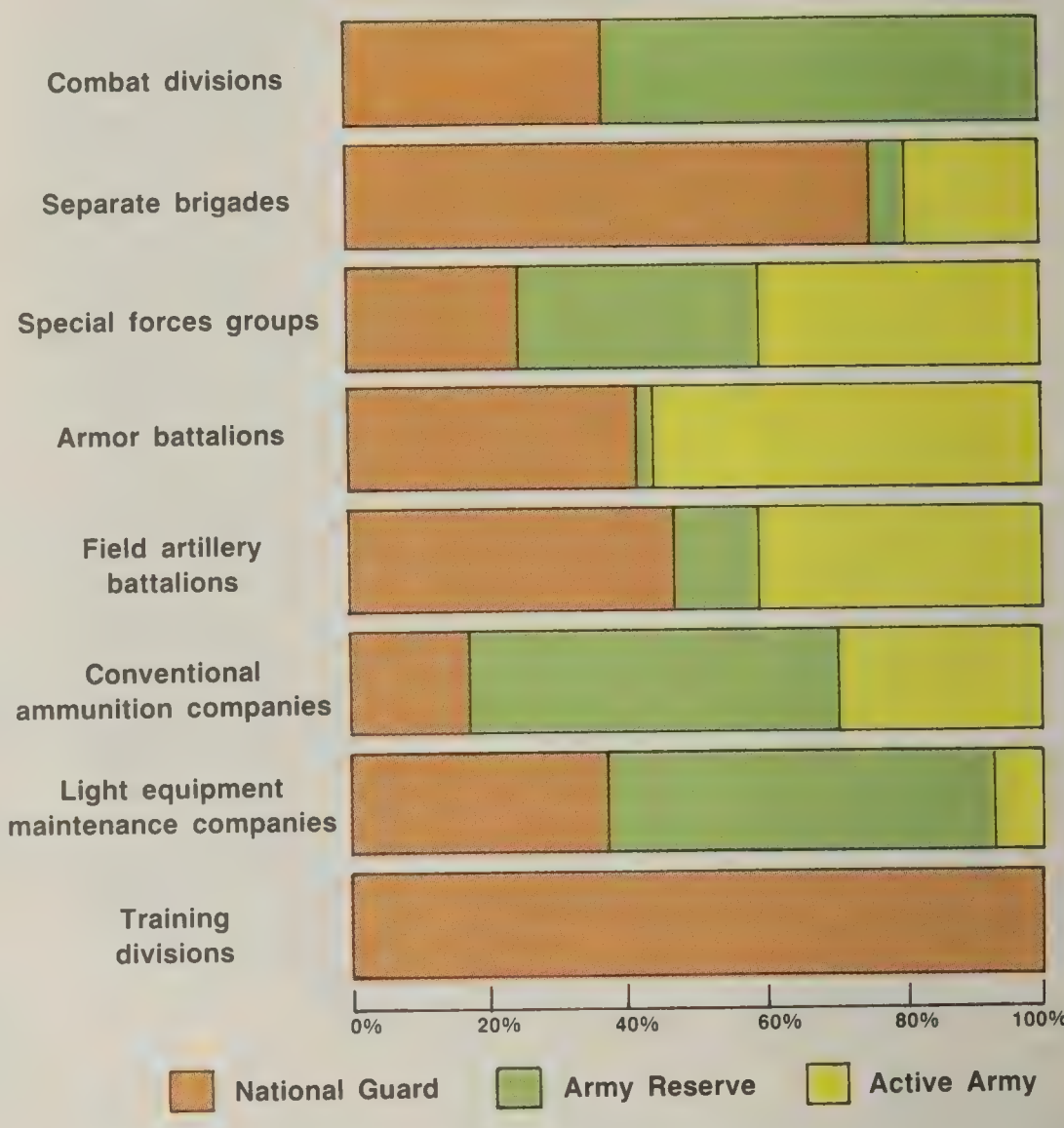
The receipt of new or displaced equipment in a reserve components unit requires transition training. NET transition is accomplished under the guidance of AMC/TRADOC NET teams which conduct onsite training for system operators and organizational mechanics and provide receiving units with a recommended sustainment training program.

However, the NET plans already developed for active units have to be modified to meet the training constraints of the reserve components. As a result, NET/DET becomes a part of the normal yearly training schedule, but because of the part-time nature of the reserve components, it becomes extremely difficult to conduct this kind of training in just 38 or 39 days a year.

The first National Guard unit to receive new M1 tanks was the 2nd Battalion, 252nd Armor, North Carolina National Guard, which is a "round-out" unit for the 2nd Armored Division located at Ft. Hood, Tex. Maj. Gen. William E. Ingram, then-North Carolina adjutant general, indicated that the normal available training time just would not be enough to conduct the necessary transition training.

MAJ. DONALD B. SKIPPER, a graduate of the University of Southern California and the Command and General Staff College, has held a variety of command and staff positions and is now the Army overseas deployment training program and evaluation program manager. MAJ. JOHN T. FISHEL, U.S. Army Reserve, is a graduate of Indiana University and a visiting professor in the School of International Studies, JFK Special Warfare Center, Ft. Bragg, N.C.

Proportion of Army Reserve Components In Total Army Forces



Source: Reserve Forces Policy Board, *Readiness Assessment of the Reserve Components, Fiscal Year 1982*, Office of the Secretary of Defense, Washington, D.C., December 1982.

The National Guard has determined that it will require two years of training conducted during two three-week annual training periods for crews to become familiar with the new equipment. This extra time requirement is not surprising when the complexities of the new technology incorporated in the M1 tank are considered.

A recent study of the M1 NET challenge found the magnitude of the effort associated with the initial skill training for maintenance personnel takes longer than two weeks. The average length of the planned NET effort to transition active Army mechanics from the M60/M48 tanks to the M1 tank is 3.9 weeks, with the longest lasting six weeks.

Beyond the NET/DET challenges for reserve components operations and organizational maintenance personnel is the greater challenge of training the reserve components combat service support (CSS) units with mobilization missions of supporting active units that have received new systems.

To meet this challenge, a new training program has been developed. The combat service support units alignment and training program identifies the planned distribution of new systems, reviews the "Capstone" alignments of supporting and supported units, and develops training concepts to assist reserve components units in planning the necessary training.

Planning and conducting this kind of training is more complex than it might first appear. AMC must identify and acquire the necessary special tools and test equipment and other ancillary tables of organization and equipment (TOE) on a wholesale basis. Once TRADOC documents the necessary TOE changes, the reserve components CSS unit must re-

quest issue of applicable tools and test equipment. A training program must then be developed based on the needs of the unit and the type of training required.

While the initial emphasis should be on individual training, other training, such as that taught at service schools, Army Reserve schools, installations and AMC installations, should also be considered. This training must be conducted during normal inactive-duty training (IDT) and annual training (AT) periods, but the normal peacetime support mission of the involved units must continue to take priority.

Consequently, a reserve components CSS unit with a peacetime responsibility of maintaining M48 tanks may also have to learn how to maintain M1 tanks belonging to the active unit that they will support in wartime.

The more advanced the new equipment, the more complex the maintenance required and the greater the challenge of developing the sophisticated maintenance skills in reserve components CSS units. Current fielding of the M1 Abrams tank represents only the "tip of the iceberg" for reserve components maintenance units.

The problems encountered and the extra training time necessary to prepare these CSS units to maintain the M1 will also arise during fielding of other complex new systems such as the UH-60 Blackhawk and AH-64 Apache helicopters, M2/3 Bradley infantry fighting vehicles and division air-defense guns.

There is no doubt, however, that conducting initial transition training, while supporting conventional peacetime operations and training in the time span of a normal training year, will present an enormous challenge to the reserve components. Even if successful transition training can be accomplished, the technical skills acquired must be sustained.

Sustainment training presents perhaps the greatest challenge in FMT. To ensure that reserve components mechanics sustain the highly technical skills required to maintain the complex equipment now being fielded, a methodology must be developed to permit frequent access to both the equipment and the sophisticated tools and test apparatus necessary to support that equipment.

One approach to systematic skill sustainment that does afford reserve components maintenance personnel frequent opportunities to gain hands-on experience with a new system is the rotation of new equipment through reserve components CSS units for regularly scheduled maintenance.

This approach is now being used for select CSS units that are expected to support the UH-60 Blackhawk helicopter in wartime. The reserve components units perform periodic maintenance on the helicopter and then trade them to active-Army units for similar aircraft in need of maintenance.

The Army has embarked on the most ambitious and extensive force modernization effort ever. Hundreds of new systems will be entering the Army inventory during the next decade and will require tremendous NET/DET and CSS training efforts for the reserve components.



The maintenance training problems associated with the introduction of the M1 tank (left) *and Bradley fighting vehicles are compounded by the consequent transfer of predecessor vehicles to the reserve components.*

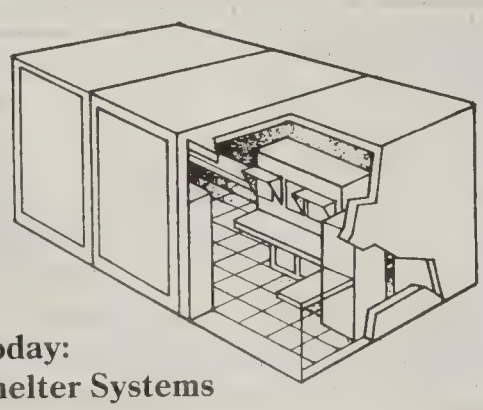
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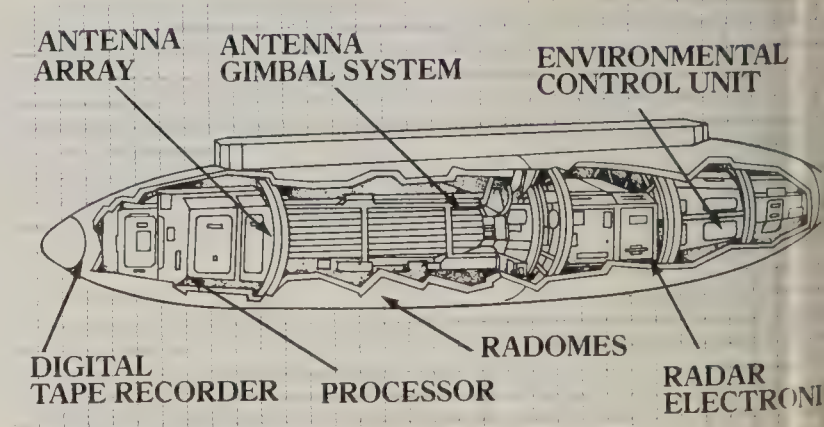
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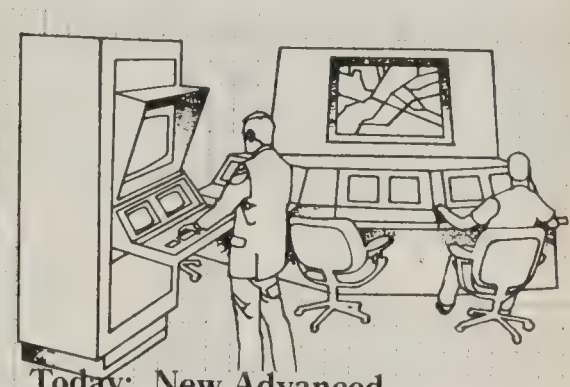
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The AH-64A Apache attack helicopter will enter service this year; the only way reserve components mechanics may learn to keep them flying is through the type of swap arrangement worked out for the UH-60A utility helicopter.

Based on current Department of the Army master priority list and current "Capstone" alignments, just the "M1 training requirement is in excess of 5,000 Guardsmen and Reservists, beginning in the mid-1980s." Initial transition and long-term sustained training for reserve components units and individuals will require more training time than is currently available during the standard training year.

Limited transition training can be achieved in a variety of ways. First, active-duty for training (ADT) man-day spaces could be requested for FMT. Generally, this would require 26-day ADT tours of duty. (Twenty-six-day tours were chosen on the basis of the average transition training time of 3.9 weeks for M1 personnel.)

The main disadvantage of this approach is that it requires the voluntary participation of soldiers who might find it difficult to obtain an additional month off from their civilian jobs.

A second approach would be a variation on this theme linking a three-week AT period with a seven-day ADT tour. This would have the advantage of reducing the amount of voluntary time involved, but it does suffer from the voluntary requirement, although to a lesser extent. It also requires a trade-off with the peacetime mission training suffering for one AT period.

A third approach would be to use the various involuntary activation authorities that exist. It might be possible to use the presidential authority for a reserve components call-up of up to 100,000 members for a period not to exceed 90 days. Alternatively, it might be legal to utilize the provisions for selective mobilization for a "domestic emergency."

If neither approach were legally possible, then authority for a selective call-up would have to be sought from Congress.

In any event, all of these approaches to the FMT problem would cost additional money which would have to be appropriated at a time when high defense budgets are being scrutinized closely.

The solution to the problems of long-term FMT seems to have been tested effectively with respect to the UH-60 Blackhawk maintenance program cited earlier. This approach should be applied to other new weapon systems such as the M1 Abrams tank and the M2/3 Bradley infantry fighting vehicles as they are fielded with the reserve components.

If we are willing to spend the time, effort and money, then the problems posed by FMT are resolvable. However, we must remember that these solutions are not one-time-only fixes. Similar problems will occur again at irregular intervals and must be considered in planning for the fielding of new systems.

Exit Only

The many and varied languages encountered by Allied troops moving across Europe during World War II caused problems both serious and amusing.

An advance armored patrol from a division assigned to Gen. George S. Patton Jr.'s forces was racing down the *autobahn* early in the move into Germany when the task force commander received a radio inquiry from division headquarters requesting his status and location.

His reply: "Proceeding without opposition. We are at present passing to the left of the city of Ausfahrt. We cannot locate the city on our maps. It must be large as we have passed many signs reading *'Ausfahrt'* with arrows pointing to our right. Over."

After a short silence the task force commander was advised that *Ausfahrt* is a German word for "exit."

Rumor had it that the commander was heard to mutter, "I wonder if I can still buy that farm in Iowa?"

Col. Lloyd W. Cassell
U.S. Army, retired

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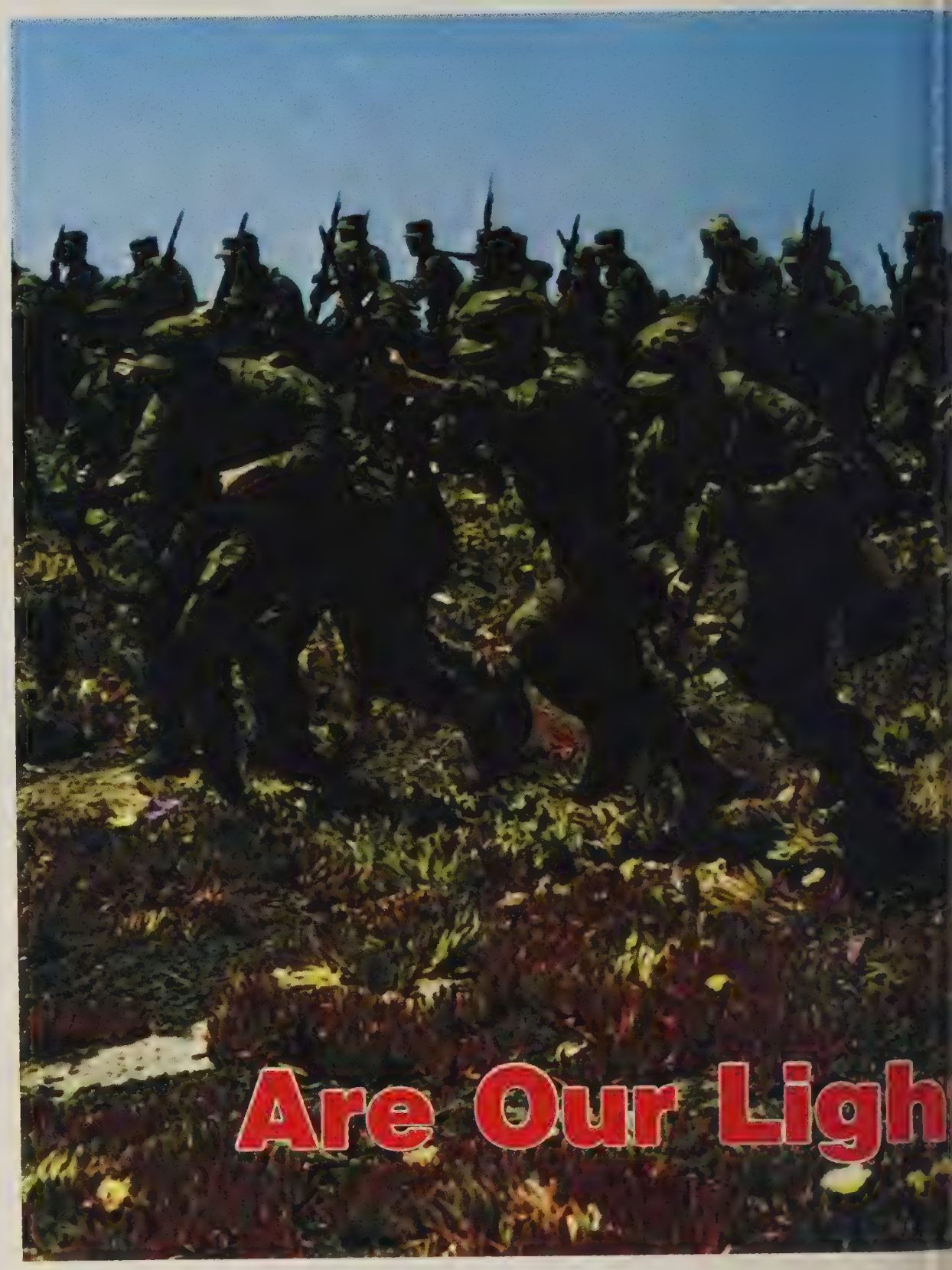
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As now designed, the Army's new light infantry divisions would be outgunned by even the least well-armed forces of the Soviet Union's Third World client states; there are light armored vehicles that could redress the imbalance and the strategic mobility penalty does not have to be high.



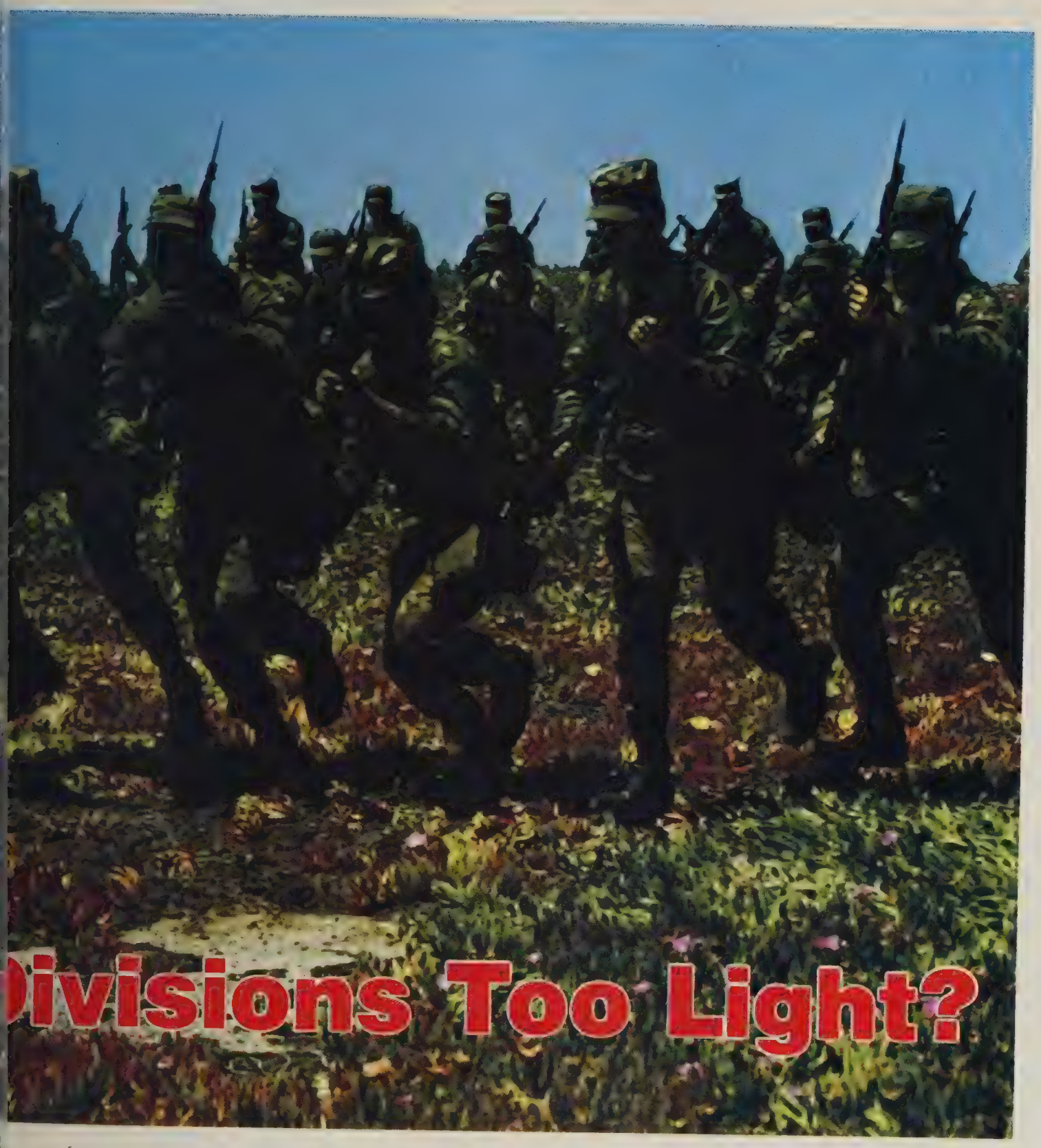
Are Our Ligh

By Edwin W. Besch

Over the next two years, the Army will establish five new 10,000-man light infantry divisions in the total force. Two (the 7th and the 25th) will be converted from existing standard infantry divisions and three (the 6th and the 10th in the active Army and the 29th in the Army National Guard) will be newly activated.

These light divisions ultimately would require significant amounts of Army personnel, equipment, logistics and funding. It is appropriate, therefore, to review the basic assumptions upon which the "light division" concept is based and to consider organizational, equipment and strategic lift alternatives that could increase combat effectiveness and efficiency.

Structurally, a light infantry division will be comprised of nine light infantry battalions with 34 1¼-ton high-mobility multipurpose wheeled vehicles (HMMWVs) each for mobility; three howitzer battalions with 18 105-mm howitzers each; an aviation brigade with 96 helicopters; a reconnaissance squadron with two helicopter troops and one ground reconnaissance troop driving a mix of HMMWVs armed with either a 25-mm chain gun or a TOW antitank missile launcher; an air defense battalion with 18 improved Vulcan 20-mm antiaircraft guns and 40 Sting-



Divisions Too Light?

The light infantry battalions will use unarmored, nonswimming HMMWVs for transportation. This is clearly contrary to world trends, which emphasize increasing mechanization of ground forces, including light infantry, and increased numbers of tanks.

Soviet ground forces, which serve as models of organization and doctrine for and provide equipment to the Third World armies that U.S. light infantry are most likely to fight, have *three* types of mechanized infantry. Soviet armored infantry ride in BMP-1 or -2 tracked infantry fighting vehicles (IFV).

Soviet mechanized light infantry, including marines, ride in BTR-60/70 eight-wheeled IFVs; and Soviet mechanized airborne infantry have BMD-1 airborne IFVs. All Soviet IFVs provide a mounted fighting capability under armor and chemical, biological and radiological collective protection for their infantrymen, who are well trained to fight dismounted and in urban areas. Some units also train in

er surface-to-air missile (SAM) teams; and a light combat engineer battalion, along with headquarters elements. The division support command will be made up of maintenance, medical, and supply and transport battalions.

The Army's new light divisions offer three directions in force design:

■ *Manpower reduction.* They will be significantly smaller than current Army divisions, which, although they are being reduced, now range from about 16,500 soldiers in the airborne division to 19,500 in the mechanized division. German, French, Israeli and other foreign armies have also cut manpower in their combat divisions, but, unlike the U.S. light division concept, their reductions in manpower have resulted largely from mechanization of combat forces with armored vehicles. These significantly improve soldiers' fighting capabilities and endurance by increasing unit firepower, mobility, survivability and carrying capacity.

■ *Removal of all armored vehicles from the division.* The Army will strip the battalion of 54 main battle tanks and the mechanized infantry battalion from the current infantry division structure to form a light infantry division, which will have no armored vehicles either as weapons or personnel carriers.

air assault and raiding techniques.

At least 18 other Warsaw Pact and Third World countries, including Cuba, use the BMP-1 IFV. The Soviets exported BTR-60PB 8 x 8 IFVs to numerous countries, including Nicaragua, and U.S. forces encountered several in Grenada. On the friendly side, Canadian Defense Forces procured several hundred Grizzly 6 x 6 armored vehicles for their light infantry units, and the British Army has ordered 497 Saxon 4 x 4 armored personnel carriers for its regular and territorial infantry battalions.

■ *Emphasis on man-portable weapons and light artillery.* The new U.S. light infantry battalions will rely primarily on small arms, light crew-served weapons and hand-held antitank weapons for their organic firepower, but each battalion also will have four towed heavy mortars. Division artillery may include 155-mm howitzers in addition to their 105-mm weapons.

In contrast, French light mechanized infantry divisions use only the 155-mm howitzer, the standard-caliber artillery weapon in modern Western combat divisions.

Unfriendly Third World countries such as Angola and Nicaragua (two of the least well armed) have Soviet 122-mm howitzers and BM-21 122-mm multiple rocket launchers; Nicaragua also has at least 12 152-mm gun-howitzers. Even if the new light divisions confronted only Third World forces today, they could expect to be outgunned by enemy forces organized and equipped on the Soviet model. In stressing strategic mobility by airlift, Army planners seemingly compromised too much on firepower as well as tactical mobility.

Thirty-two years ago, Col. Arthur J. Stuart, U.S. Marine Corps, described in the November 1952 U.S. Naval Institute *Proceedings* the dilemmas confronting any light infantry force used in a rapid deployment (landing) role:

> In addition to inherent lack of mobility, the foot landing force lacks present day power. It employs essentially man-carried weapons. These weapons are basically inferior in mobility and firepower to those of modern mechanized ground forces, actually forcing the foot landing force to fight on a basis of inferiority rather than superiority against defending mechanized ground forces. . . . Seen thus, the foot landing force must inevitably pass in favor of the mechanized landing force.



Soviet light mechanized infantry ride in these BTR-70 wheeled infantry fighting vehicles, an updated version of the BTR-60 series exported to Third World nations.



The Marine Corps Light Armored Vehicle 25, outfitted as an infantry squad carrier, with small arms firing ports in the rear compartment.

From the Army's introspective viewpoint, light infantry divisions may seem to be a clever answer to constraints imposed by limited airlift assets and to combat needs based on its past experiences.

In Korea, for example, where the U.S. Army commander is a light division enthusiast, light divisions could be used effectively in mountainous terrain. But Southwest Asia, another contingency area for deployment of light divisions assigned to U.S. Central Command, has heavily mechanized potential enemies and terrain better suited to mechanized operations.

The assumption that light infantry divisions still have a place on potential battlefields in areas of key interest to the United States grows weaker every year. Even if U.S. infantry possessed first-rate man-portable antitank weapons, these still could not compensate for the versatile firepower, tactical mobility, survivability and endurance provided by modern light armored vehicles proliferating in other armies.

Mechanized infantry, if equipped with suitably designed tracked or wheeled IFVs, can fight mounted alongside tanks, fight

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EDWIN W. BESCH, a U.S. Naval Academy graduate, is a retired Marine infantry officer and former CIA intelligence analyst. He has served as a consultant to Army, Marine Corps and Air Force light armored vehicle programs and study groups.

dismounted with the support of IFV main armament, or leave their IFVs behind (much as Civil War cavalry left their horses in the hands of horseholders) and fight as light infantry. But vehicle maintenance imposes a burden (less so for wheeled vehicles), and mechanized infantry can neglect their conventional infantry techniques.

If well trained for a specific set of scenarios likely to be encountered in a particular area, however, light mechanized infantry should be able to fight dismounted as well as light infantry while having more flexibility in most situations.

Joint service light armored vehicle (LAV) and mobile protected gun system (MPGS) programs were established in 1980 to select off-the-shelf vehicle and armament combinations meeting U.S. Army and Marine Corps needs for an infantry squad carrier and support vehicles (LAV) and a light tank or tank substitute (MPGS). To keep down unit costs and simplify logistics, Congress sensibly insisted on single vehicle types in each category to meet both services' needs.

In September 1982, the Marine Corps selected an improved, 8 x 8 version of the Swiss-Canadian Piranha vehicle armed with the Hughes M242 25-mm chain gun as the standard U.S. LAV after testing three other tracked and wheeled vehicle candidates and studying other foreign wheeled designs.

When the Army lost interest and its LAV funding, the U.S. Marine Corps procured all of the 744 LAVs originally contracted for, plus an additional 14 LAVs, in six versions: LAV 25 infantry squad carrier, command and control, TOW antitank, mortar carrier, maintenance and recovery, and logistics.

Even though the Marines selected the LAV 25, it also should meet Army needs for the same types of vehicle and armament. The LAV 25 originated in the mid-1970s as the Swiss MOWAG (*Motorwagenfabrik A.G.*) Piranha, which combined the configuration and fighting features of a tracked IFV with MOWAG's experience gained in developing several families of wheeled armored vehicles.

Canada selected the Piranha 6 x 6 as its "armored vehicle, general purpose" (AVGP) after studying 13 other wheeled armored vehicles, and its active and reserve light infantry units use the Grizzly armored personnel carrier version of the AVGP.

The Piranha-AVGP went through another major development phase to meet U.S. Army and Marine Corps requirements, and after study of other competitors and thorough testing against the British Alvis Scorpion-Stormer tracked vehicles and Cadillac Gage Co.'s V150 4 x 4 and V300 6 x 6 vehicles, it was selected as the standard U.S. LAV.

The Marine Corps's LAV 25 offers substantial life-cycle cost savings over tracked infantry squad carriers like the M113A1 and, when fitted with firing ports, better fighting qualities. The LAV 25 and a LAV 25/TOW 2 combination can provide nearly the same platoon firepower and the same troop capacity at a third to half the cost of the M2 Bradley IFV.

The LAV 25's lower silhouette, small cross section and greater agility on dry terrain partially compensate for the Bradley's heavier protection. Most important, the LAV 25 can be carried in C-130 aircraft, while the Bradley cannot. The LAV 25 can also be carried, sling-loaded, by Marine CH-53E helicopters, and the Navy's new air cushion landing craft (LCAC) can carry five LAVs. Marine CH-53Es and Navy LCACs would be available to meet Army needs in a joint operation.

Army planners who advocate the use of the HMMWV instead of the LAV 25 in 25-mm chain gun, TOW launcher and infantry carrier roles ought to closely compare their relative capacities and lift requirements (not to mention protection levels, cross-country mobility, swimming capabilities and the like). "Smaller" does not necessarily mean more "strategically mobile" for the same combat capability.

For example, Delco is developing a LAV 25/TOW 2 version carrying a four- to five-man crew, dual TOW 2 launcher and ten missiles that could be used as a four- to five-man platoon commander's vehicle alongside three LAV 25 nine-man infantry squad carriers.

Matching the firepower and carrying capacity of four LAV 25s (one fitted with dual TOW 2) would require nine HMMWVs (and five extra drivers and five extra gunners) to carry four 25-mm chain guns, two TOW launchers, and three eight- or nine-man infantry squads.

A light mechanized infantry platoon equipped with four LAV 25s would require another C-130 or 0.5 aircraft additional space in a C-141B, but 0.1 aircraft less space in a C-5A Galaxy aircraft than would a reinforced motorized infantry platoon equipped with nine HMMWVs.

A separate platoon commander's HMMWV would add a tenth vehicle and require additional space. The strategic mobility advantages of the HMMWV over the LAV 25 are not significant when their overall capabilities and survivability are



For tactical mobility, the light infantry divisions will rely on the M998-series 1¼-ton 4 x 4 truck, an experimental armored squad carrier version of which is shown here (left) *fording a stream in the company of a M939 five-ton truck.*

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Some of the Marine Corps wheeled LAVs have been ordered as antitank vehicles with articulated, dual-tube TOW missile-launching turrets (right)*; the chassis can also handle low-recoil 105-mm tank guns:* below *is a Swiss Piranha vehicle, on which the LAV is based, armed with a Rheinmetall RH–105–11 gun, and this combination is being considered as a tank substitute for U.S. light forces.*



compared and personnel costs and logistics requirements for extra HMMWV drivers and gunners are considered.

Appropriate technologies for U.S. light infantry divisions which must be able to fight "anytime, anywhere and against any opponent" are exemplified by the Marine Corps LAV 25 and its variants, the LAV or other MPGS candidates mounting a 105-mm soft recoil gun such as the Rheinmetall RH–105–11 which can fire M1 tank ammunition, the LAV 25/TOW 2 under development and a LAV/air-defense version mounting a GAU8/A 30-mm gun–Stinger SAM combination. These systems offer nearly the same firepower of the Army's "heavy" divisions but trade protection level for strategic mobility.

A light mechanized division could be a 10,000-man or smaller division, depending on the number of combat brigades, unit strengths, inclusion of an aviation brigade and other factors. Its combat elements could be airlifted as light infantry in about the same number of sorties as could a light infantry division if some or all LAVs and MPGS vehicles were left behind either temporarily or for the duration of a campaign.

But a light mechanized division also has the flexibility to bring some or all of its combat vehicles with it depending on its mission, time constraints and availability of air- or sealift assets. Maritime prepositioning of vehicles and other heavy equipment is another Army option that Marines will exploit by posting two LAV companies on each of three prepositioned depot ships.

Lifting a division-size unit is not the only option. Given the firepower and mobility offered by the LAV 25 and MPGS candidates, a combat brigade equipped with these vehicles and supported by 155-mm howitzers, engineers and an aviation attachment should be as strategically deployable as a 10,000-man light infantry division and more combat effective and tactically mobile in the objective area. Certainly, its arrival in a friendly country would do more to bolster confidence and morale than a bunch of footmobile troops with light arms and "shanks mare" mobility.

Using the LAV 25, its variants and the LAV 105 or another MPGS alternative, the U.S. Army could build modern, well-equipped, division-size fighting forces with greater flexibility for both combat and deployment. Specialized light infantry missions should be left to smaller elite units—separate brigades and Ranger battalions—with the provision that all mechanized infantry units be adequately trained in dismounted combat.

Because infantry divisions are far more likely to see combat outside of Europe than are the armor divisions, it is particularly important that the U.S. Army modernize its infantry, but not by turning back the clock to make them more footmobile and by giving them only "high-technology" support.

By procuring for them "appropriate technology" armored vehicles and artillery weapons, the Army can ensure that its infantry divisions will be effective and versatile without incurring unnecessary losses on future battlefields.



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Once Again, Hail to the

Military Presence in Toasting the Ne

By Col. Jack W. Rudolph
U.S. Army, retired



A patriotic pageant of floats, marching units and bands proceeds down the avenue of the presidents. On both sides of the mile-long vista from the Capitol to the White House, thousands shiver in the cold sunlight or huddle under dripping umbrellas. The inaugural parade is passing by.

Only a fraction of the multitude visiting Washington, D.C., on 21 January for the installation of a President of the United States will see the actual ceremony, but much of the world will watch the extraordinary procession on television.

Vesting an elected national leader with one of the world's most powerful offices is deceptively simple, but the triumphal procession that follows him to his temporary home is far more complicated.

While the inauguration ceremony has remained basically unchanged for nearly 200 years, the parade has mushroomed from a small escort of honor into a mammoth, uniquely American spectacle on which millions of hours of planning, ingenuity and dollars are lavished. It is also remarkably durable. In a century and a half only two inaugurations—in 1921 and 1945—have omitted the parade.

Since the first inauguration, the military services have played a key role. From a modest beginning with a small New York militia escort for George Washington in 1789, the military's participation grew steadily as the scope of inaugural processions expanded until the armed forces (including what are now called the reserve components) virtually dominated the parades in the first half of this century. Not the least of the advantages enjoyed by the military in preparing for the inaugural parade is its experience in organizing and moving great bodies of people.

Commander in Chief

★ ★ ★ ★

esident Is as Old as Country Itself



Although George Washington was escorted to his first inaugural in New York by a congressional committee, a troop of light dragoons and a "legion" of infantry, he went to his second in Philadelphia, Pa., without fanfare. So, except for buying a new coach and a pearl gray suit, did John Adams in 1797. Both were trying to play down the "popular excesses" of the first New York event.

Thomas Jefferson did not need an escort four years later in Washington. He simply strolled over from his boarding house, where a corner of the Longworth House Office Building now stands, to the Senate wing of the unfinished Capitol, then back again. On the way he paused to inspect a company of Alexandria, Va., riflemen and the Washington Artillery, which had been banging out salutes under his windows since sunup. Mr. Jefferson might have put on a better show, but his coach got stuck in the mud and did not arrive in time.

A military escort, consisting of a militia cavalry troop, was revived for James Madison, who also trooped the line of nine District volunteer companies at the Capitol. Four years later, his escort was a legion of volunteer dragoons and militia from Washington, Georgetown and Alexandria.

A nonmilitary element was introduced at James Monroe's first inauguration in 1817 when a large cavalcade of mounted government officials and District residents assembled at his home and followed the escort to and from the Hill. The Marine Band played at his second inauguration but apparently did not march.

Andrew Jackson did not have an escort. Taking the cue from a disgruntled John Quincy Adams, who left town before Andrew Jackson's installation, the area militia would not turn out for him. "Old Hickory" walked the few blocks from John Gadsby's National Hotel—the last President to go to his inauguration on foot.

He rode a horse back to the White House trailed by a horde of Western followers who invaded the mansion to acclaim their hero in a disorderly mob scene.

The tradition of incoming and outgoing presidents riding to the ceremony together began with Martin Van Buren in 1837. "Little Van" and Andrew Jackson left the While House in the new "Constitution" coach, built from timbers of the famed frigate U.S.S. *Constitution* and presented to Mr. Jackson by the Democrats of New York.

It was a handsome sight as it bounced along the rutted avenue behind Mr. Jackson's splendid team of grays. Mentioned in a description of the parade was an "excellent band," presumably the Marine Band which was marching for the first time.

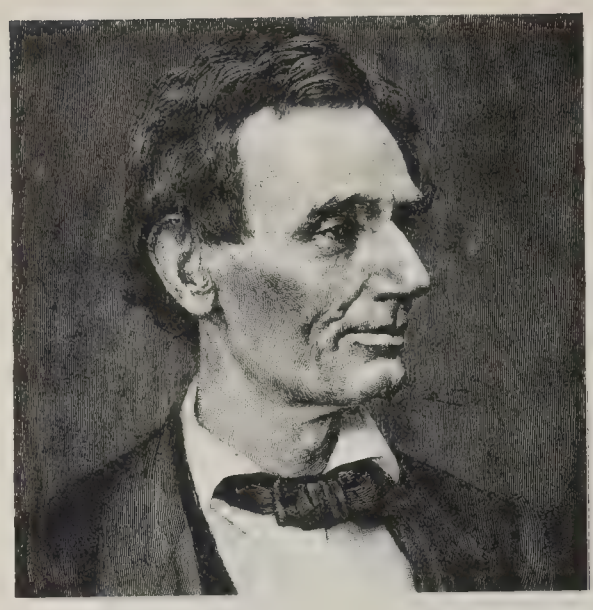
Before 1841, inaugurations had been cozy neighborhood affairs. Washington was a small town with inadequate housing for transients and was hard to reach except by water or stage and horseback over wretched roads. Few outsiders visited unless they had urgent government business. The arrival of the railroad changed everything.

The election of William Henry Harrison in 1841 put a new political party in power. Jubilant Whigs, taking advantage of the new transportation, swarmed in from all directions. Despite the cold, driving rain, a procession two miles long escorted "Old Tippecanoe" to his inauguration, led by Mr. Harrison himself (who looked impressive in the saddle and knew it), bareheaded and without an overcoat. Accounts of the parade mention his "dashing charger," but John Quincy Adams, watching from the comfort of his living room, called it a "mean-looking white horse."

To coordinate the march, which was becoming more complicated as it grew in size, parade marshals were appointed. Their places in the pecking order marked by different colored sashes, rosettes, saddle cloths and batons, they galloped up and down Pennsylvania Avenue shouting orders, delivering messages and generally throwing their weight around.

When the Democrats recaptured the White House in 1845, their parade on another cheerless, rainy day, while more sedate, was larger. Disregarding the downpour, outgoing John Tyler picked up incumbent James Polk in an open carriage for the ride to the Capitol.

COL. JACK W. RUDOLPH, U.S. Army, retired, worked as a newspaper writer from his retirement from the service in 1953 until 1973. He is now a free-lance writer.



Abraham Lincoln

Franklin Pierce, who looked more like a president than he turned out to be, added a new wrinkle in 1853 by standing up in his open barouche to acknowledge the plaudits of a crowd of more than 70,000. His parade, rated the finest military display yet seen in Washington, featured a horse battery of the U.S. Light Artillery with four gleaming brass guns and caissons.

James Buchanan was almost late for his swearing in because Franklin Pierce did not arrive at the National Hotel on time. It was not Mr. Pierce's fault, however. The inaugural committee forgot to send a carriage for him and he finally had to order his own. For the first time, a small delegation from California marched in the parade, which also included the first large floats.

Until Abraham Lincoln's inauguration, attention had not been paid to presidential safety, but with seven states already out of the Union and Virginia and Maryland on the brink, Washington seethed with rumors that the new President would not live to take office. The very city itself was a problem: essentially Southern in sympathy, Washington was so full of secessionists and assassination plotters that Mr. Lincoln had to sneak into town under cover of darkness.

To ensure that he got to the Capitol and back to the White House safely, responsibility for his well-being was entrusted to Lt. Gen. Winfield Scott, commander of the Army. The old hero was a physical wreck, but his planning skills were still sharp.

Pennsylvania Avenue was lined with troops, and expert riflemen were posted atop buildings (including the Capitol itself) overlooking the parade route with orders to shoot first and ask questions later if they spotted anything suspicious. Gen. Scott even stationed a battery of artillery on Capitol Hill to sweep the street if necessary. President Lincoln's open carriage was so closely surrounded by mounted guards that it was almost impossible to see him, let alone take aim at him.

One incident did give security forces a brief scare. As the procession moved up the avenue, a sharp rasping crackle could be heard at intervals of about three seconds. The mysterious sound was finally traced to the New England delegation, which was wearing peg-soled shoes. The pegs had shrunk, causing a loud squeak that could be heard for blocks as 250 embarrassed New Englanders picked them up and put them down in unison.

Once the trauma of the Civil War ended, the parade bounced back with renewed vigor for Ulysses S. Grant in 1869.

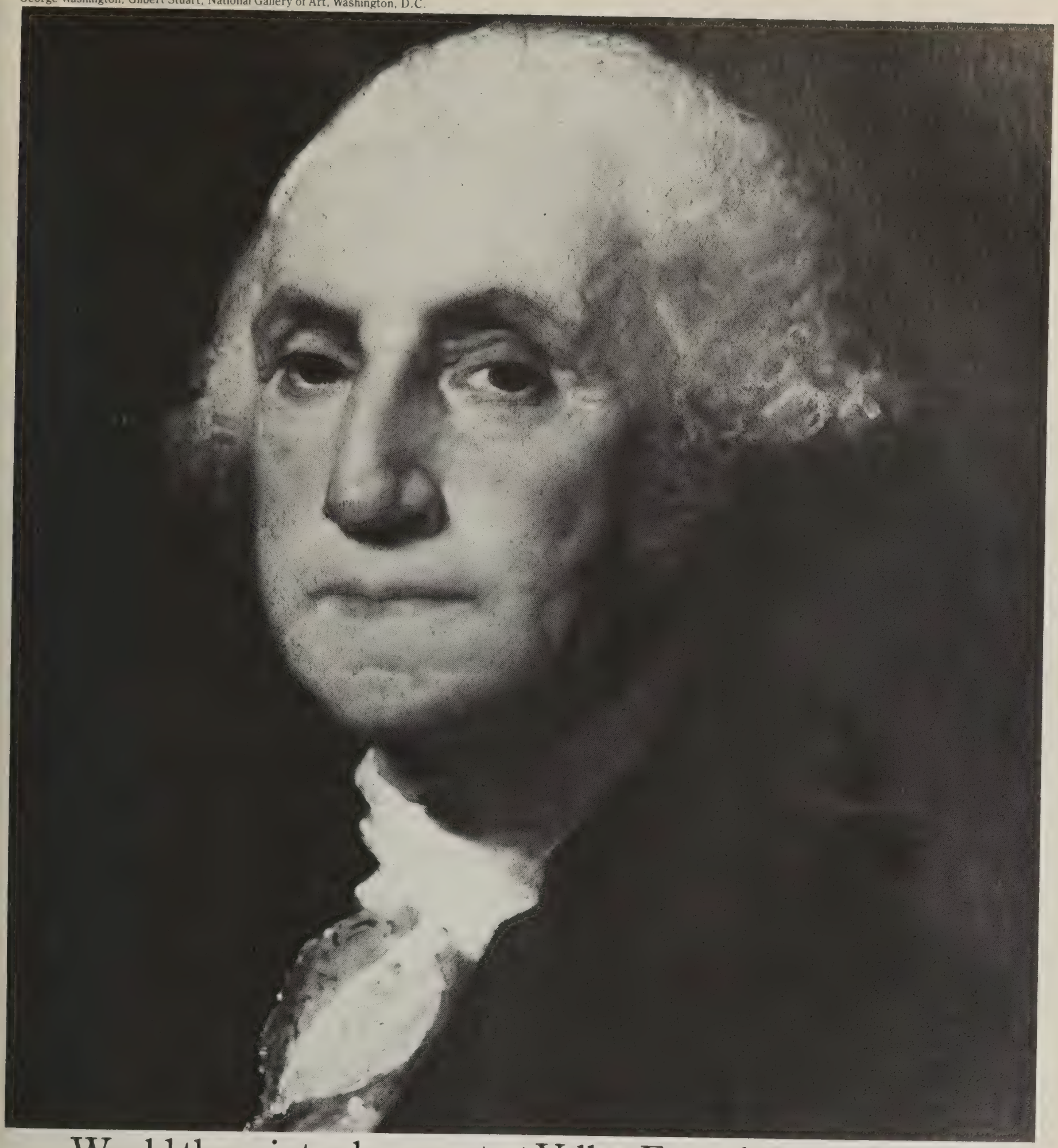


Ulysses S. Grant

It was also better organized. The horde of marshals, whose appointments had become a headache, was eliminated except for a single grand marshal (a post subsequently filled by the likes of Gens. William T. Sherman, Leonard Wood, Douglas MacArthur, George C. Marshall, Omar N. Bradley and Adms. Alan Kirk and Arthur Radford) and the order of march was reorganized into homogeneous divisions, each led by a Civil War general. Consistent with Gen. Grant's military stature, the armed forces received the position of honor at the head of the column, which they retained for a century.

The only figure missing was President Andrew Johnson. Mr. Grant had refused to ride with Andrew Johnson, but when the escort reached the White House he sent in a message that he was ready to proceed. Mr. Johnson replied politely that Mr. Grant could go to hell, whereupon the march to the Capitol resumed without him. It was the last time an outgoing President did not attend the inauguration of his successor.

George Washington; Gilbert Stuart; National Gallery of Art, Washington, D.C.



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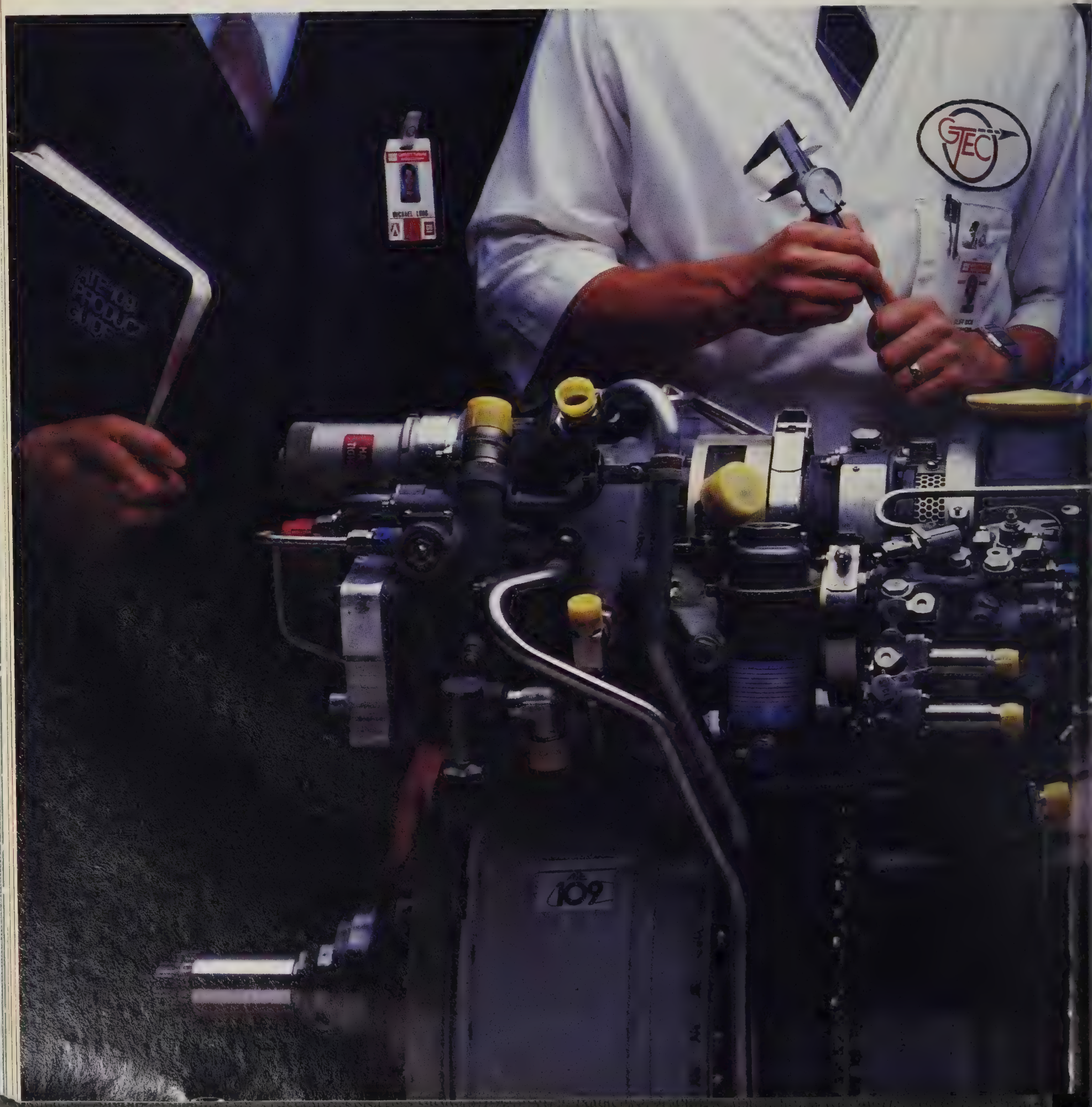
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Allison's production base incorporates over 20,000 helicopter engines delivered, including 5,000 engines in the U.S. Army inventory alone. They have just completed a program on the Advanced Technology Demonstrator Engine (ATDE). This engine has exceeded all the Army's performance goals for advanced helicopte



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gines. This technology will be fully plemented in the new ATE109. New production techniques can implemented quickly, too. Garrett oduction facilities utilize some of e latest manufacturing and testing chniques known. And Allison, with "factory of the future" program, s the capability to meet any oduction needs. Several times ring this century Allison has turned t impressive numbers of engines, en America needed engines.

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Allison and Garrett.
America's LHX team.



The coldest inauguration day in history was 4 March, 1873, with bone-chilling winds and a temperature near zero, but the weather failed to dampen enthusiasm for the parade. The U.S. Military and Naval academies marched for the first time, although the experience was not pleasant for the former. Under the impression that they were heading for the sunny South, the West Pointers had left their overcoats at home. Two shivering cadets collapsed and were carried into the White House to thaw out.

An innovation, now routine, was a reviewing stand in front of the mansion from which President Grant returned the salute of 12,000 men, among them 30 survivors of the War of 1812 and 60 of the Mexican War. Over the years the pavilion has grown into an elaborate court of honor with seats for VIPs on both sides of the avenue between 15th and 17th streets.

An electrical snowstorm threatened James A. Garfield's 1881 inaugural celebration but abated in time. Even so, the going was sloppy for more than 13,000 men in the largest military show since the Grand Review at the close of the Civil War. One major military element was an entire division of the National Guard of Pennsylvania, 18 regiments in full field kit.

Participants in the parades throughout the 1880s, the Bucktails put on a splendid marching show but off duty were a major nuisance. They caused so much trouble on the streets during inaugural week that, finally, the committee politely asked them to stay home.

The return of the Democrats with Grover Cleveland in 1885 also saw Southern military units, many of which had fought under the Stars and Bars, in column for the first time since before the Civil War. As the Southerners, led by ex-Confederate Maj. Gen. Fitzhugh Lee, swung down the avenue, echoes of the rebel yell welled up from the crowd of 100,000.

Sixteen years later, the Shenandoah Valley of Virginia sent a new Stonewall Brigade to Washington. When passing the reviewing stand, the troops, much better dressed than their fathers who had marched with Stonewall Jackson, let fly with their familiar yell. That time, it was a salute to a President who had fought for the Union, not a snarl of defiance.

By 1929, the wounds of war had so well healed that when a younger generation of the Richmond Blues, with a straight-backed, white-haired old man in



James A. Garfield

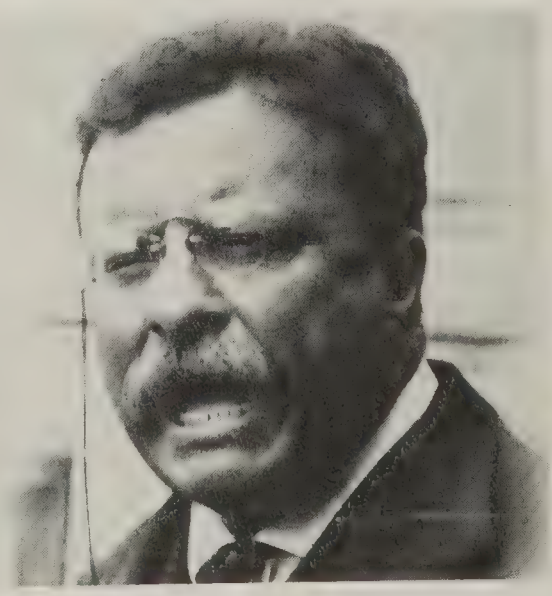
a Confederate slouch hat in the lead, passed the reviewing stand, the entire presidential party rose in tribute.

By 1889, the problem of marching thousands of men up the Hill and right back down again had become so involved that Benjamin Harrison called it off. Instead, he and Grover Cleveland went to the Capitol with a modest escort headed by his old Civil War command, the 70th Indiana Volunteers, while the parade itself followed the swearing in.

At the turn of the century, inaugural parades were occasions of national muscle flexing. William McKinley's 1901 show was criticized as an "emperor's holiday," but Theodore Roosevelt topped it in 1905.

His procession featured battalions of Puerto Rican and Filipino soldiers as well as a whooping detachment of Rough Riders in cowboy regalia who drew almost as much publicity as the President himself. Six mounted Indian war chiefs in battle paint and feathers, including the elusive Apache, Geronimo, and Quanah Parker of the Comanche, signified that the Indian wars were at last ended.

After many years, it had become traditional for every band to break into "Hail to the Chief" while passing the reviewing stand. As the number of bands proliferated, the poor President was doomed to listening to the same tune over and over.



Theodore Roosevelt

William McKinley, who had endured it once, blew the whistle in 1901. He decreed that only the first band in the procession would play the piece. Also, for the first time, the reviewing stand was encased in glass.

The "Taft Blizzard" of 1909 forced the inauguration ceremony indoors for the first time since Andrew Jackson's second inaugural, but it did not stop the parade or the West Point cadets. When their train was halted by fallen trees and telephone poles on the tracks, the cadets piled out, formed work parties and cleared the way. Pitching in were Cadets George S. Patton Jr., Robert L. Eichelberger, Jacob L. Devers, William H. Simpson, Walton H. Walker, Wade H. Haislip, Millard F. Harmon, John C. H. Lee and Philip B. Fleming.

From their inception, inaugural parades had been a male monopoly until Helen Taft scored a small but significant breakthrough by riding back to the White House at the head of the column with her husband. Every presidential spouse



Woodrow Wilson

since has done the same, but it was not until 1917 that women actually marched in the parade. That year more than 1,000 women, wearing long white capes and caps, took their place in line.

Woodrow Wilson's first parade was a whopper, with 43,000 men marching for 300,000 spectators. With the country on the verge of war, the 1917 effort was somber. For the first time since 1861, troops lined Pennsylvania Avenue, many of them National Guardsmen just returned from the Mexican border. A touching scene involved a handful of aged Civil War veterans carrying a banner proclaiming, "We are ready again."



As the oldest corps of the nation's senior service, the 1st Battalion, 3rd Infantry (The Old Guard), usually escorts the new president in inaugural parades; this is the unit's Continental Color Guard, marching in the 1981 inaugural parade.

Warren G. Harding canceled the parade in 1921, but shattered a tradition by riding to the Hill with a feeble Woodrow Wilson in a motor car instead of an open horse-drawn carriage. The twilight of the horse age had fallen as early as 1905,



Calvin Coolidge

however, when a lone automobile appeared in the column. In 1913, a phalanx of six Packards preceded the column to clear the way.

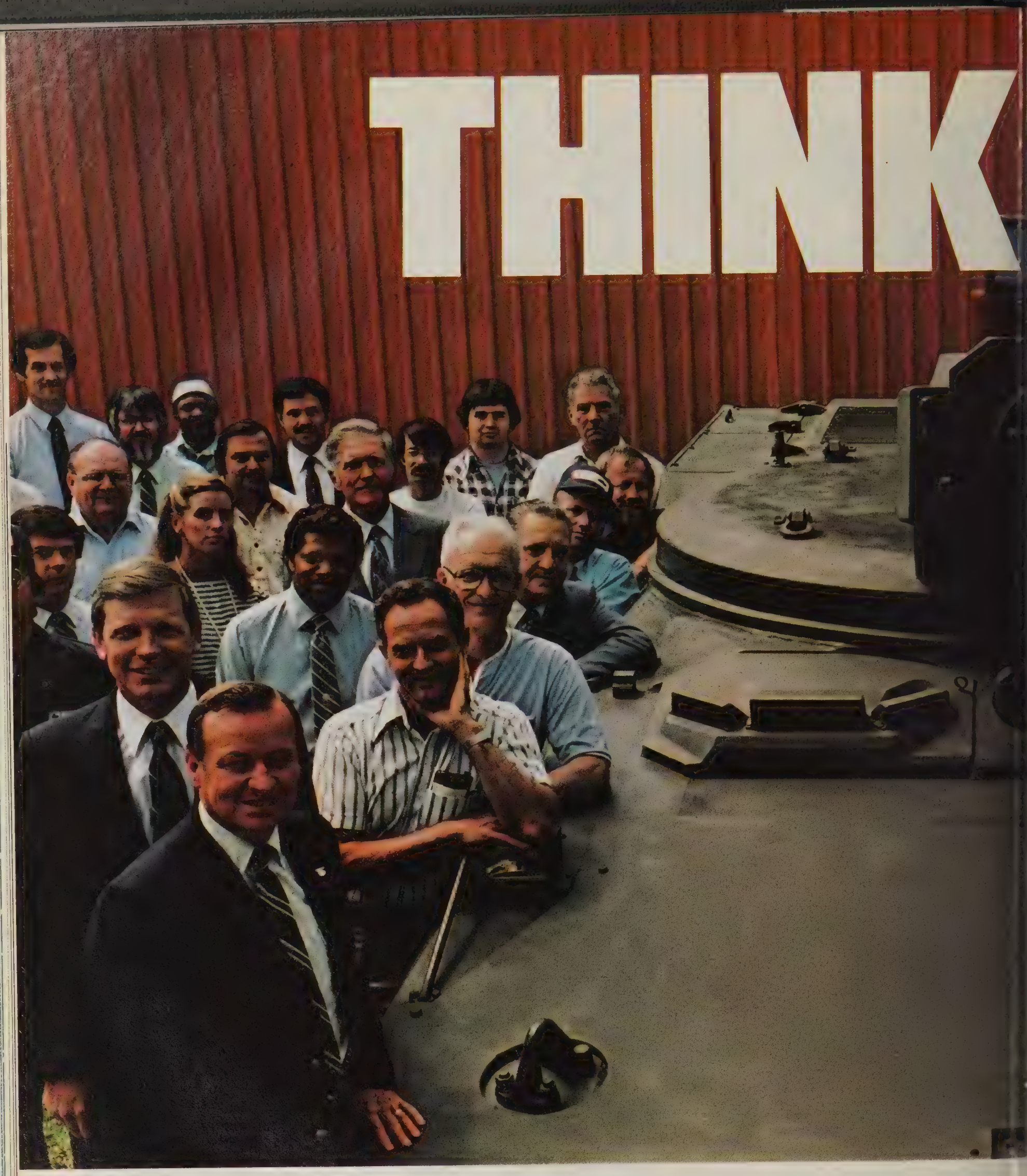
Calvin Coolidge launched a modest parade revival in 1925, but the War Department probably wished he had not. The Army put 32 tanks in line, but the show of armored might fizzled when all but two broke down and had to be removed. Another first was the hookup of 24 radio stations to bring the event to the entire country.

The Great Depression was just over the horizon when Herbert C. Hoover led a huge procession through pouring rain in 1929. What was then a mighty forma-



Franklin D. Roosevelt

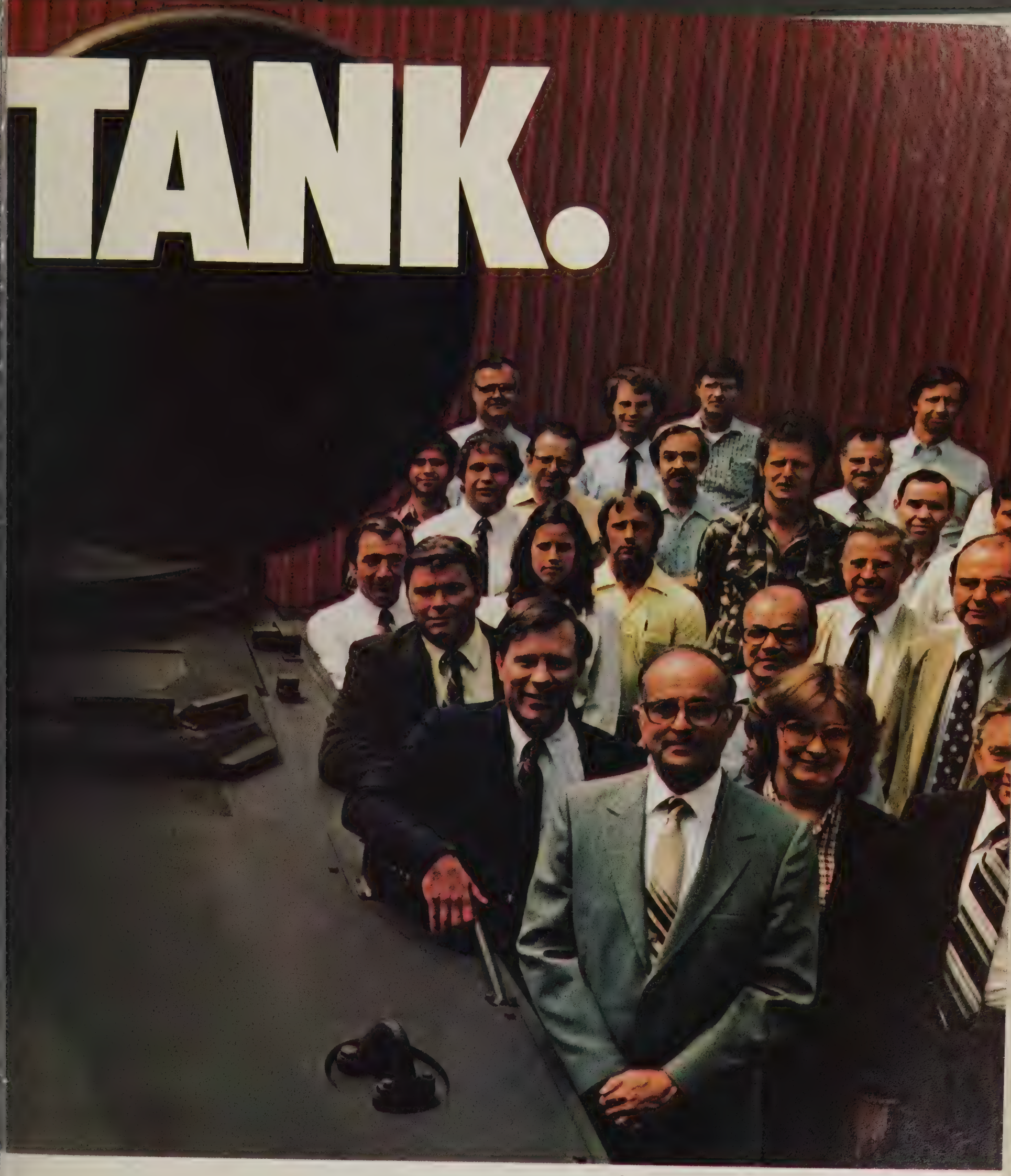
tion of 90 military planes, led by the Navy dirigible *Los Angeles*, swept overhead, the command plane piloted by an obscure major named Carl Spaatz. On the ground, a band of Indians in full re-



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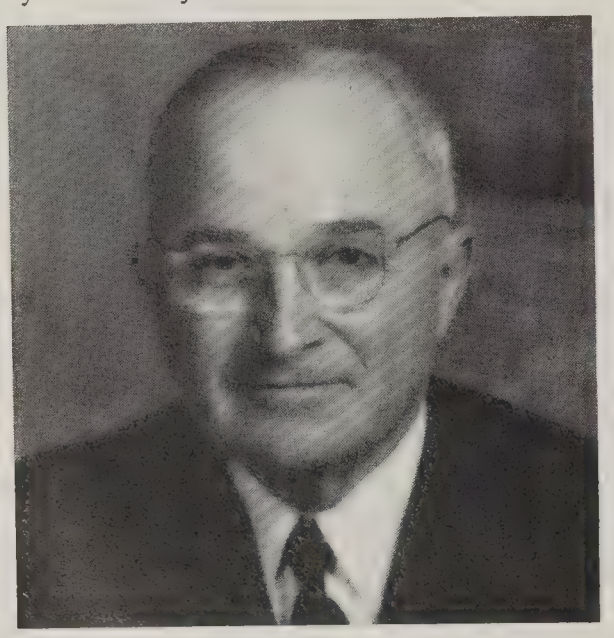
THE SENSIBLE SOLUTION



The 3rd Infantry's Salute Gun Platoon renders the traditional 21-gun salute from the lawns of the Capitol's West Front during the 1981 inaugural.

galia did not look as fearsome in automobiles as they had earlier on horseback.

The first January inauguration in 1937 was conducted in a chilling rainstorm, but Franklin D. Roosevelt withstood it, ordering the protective glass removed from the reviewing stand. His third, under the looming threat of war, was largely a military show with 280 warplanes



Harry S Truman

in the flyover, including 18 Flying Fortresses.

George C. Marshall was the last grand marshal to lead the column on horse. There was no parade in 1945, when an ill FDR took the oath for the fourth time on the back porch of the White House.

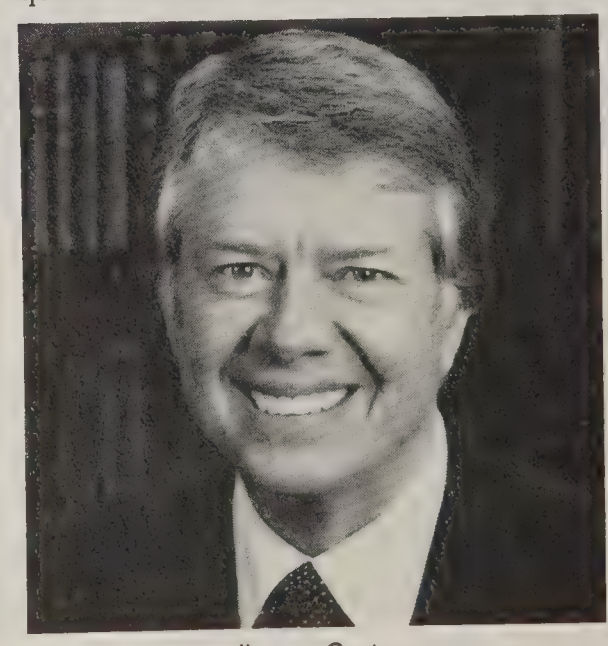
In 1949, Harry S Truman reviewed a seven-mile-long parade from a steam-heated pavilion. In line were 55 floats and 46 bands, the Budweiser Clydesdales, a circus calliope drawn by eight white horses, and war heroes Gen. Dwight D. Eisenhower, Gen. Jonathan M. Wainwright, Adm. Chester W. Nimitz and Adm. William F. Halsey Jr.

The aerial show consisted of 615 planes, among them five six-engined B-36s. A squadron of B-29s flew nonstop from Florida and back. This spectacle was seen for the first time on television.

Another first occurred in 1953 when a Navy admiral, Alan G. Kirk, led the way as grand marshal. Carl Spaatz was back, too, this time as an Air Force general. Another innovation was the awarding of prizes for best float, marching unit and band.

Again, in 1957 the Navy led the way with Adm. Arthur W. Radford, chairman of the Joint Chiefs of Staff, as grand marshal. The newly established Air Force Academy made its debut with 1,000 cadets in line. A cheerful feature of the 1957 parade was the Montana cowboy who, while passing the reviewing stand, looped a lariat over President Eisenhower. "Ike" did not seem to mind, but the caper sent his Secret Service guards scurrying up the pillars of the court of honor.

In 1953, a photographer named Jacqueline Bouvier lurked near the White House gate to get a picture of the presidential party for her Washington newspaper. In 1961, Jacqueline Bouvier Kennedy sat in the same seat Mamie Eisenhower had occupied eight years earlier to watch the inaugural parade of her husband, John F. Kennedy.



Jimmy Carter

The memory of the Dallas tragedy was still vivid when Lyndon B. Johnson rode to his inauguration in an armored limousine and watched his parade from behind bullet-proof glass while standing on an armor-plated floor. Pennsylvania Avenue was lined with unarmed troops.

Swinging proudly past its most distinguished graduate was the Doland (S.D.) High School band, in which Vice-President Hubert H. Humphrey had once played.

Security was even tighter for Richard M. Nixon's first inaugural parade in 1969, in which the armed services lost the preeminence they had enjoyed for a full century.

Instead of being massed at the head of the column, military units were interspersed throughout the order of march. Also in the column rode Mamie Eisenhower and a former movie star, then governor of California, Ronald Reagan.

Although Richard Nixon's 1973 parade was marred by Vietnam war protesters who threw fruit at the presidential limousine, it was one of the most colorful in history with 47 states represented.

The inaugural spectacle came full cycle in 1977 when President Jimmy Carter walked away from his, just as Thomas Jefferson had 176 years before. The difference was that Mr. Jefferson did not have nearly a million spectators cheering him on.

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Superpowers jockey for footholds in a sea which could become crucial to U.S. interests in a confrontation with the Soviet Union or if we should become embroiled in a war in the Middle East.

The Indian Ocean: Cold War to Maintain A Presence

By Eric Y. Beaudan

The Indian Ocean, off the desolate coast of East Africa: on the flight deck of the U.S.S. *Dwight D. Eisenhower*, hordes of attack and fighter planes warm their engines before the first morning launch. In the distance, the two escort cruisers of the nuclear task force execute a 20-degree turn to follow the carrier now facing the wind.

First to take off is an E-2C surveillance plane which will monitor the rest of the carrier based planes in flight. The bubble between the two forward catapults is lowered to deck level—a new feature on *Nimitz*-class carriers—while the weight of the plane is checked by crewmen. When the final signal is given, the pilot salutes and the aircraft abruptly rockets off the deck along the 300 feet of catapult.

Three hundred miles away, a Bear reconnaissance plane leaves from the Soviet base of Aden in the territory of South Yemen and is picked up immediately on the Hawkeye's radar, now positioned 50 miles north of the carrier. Two F-14s on a two-hour alert mission are given a course to intercept and make radar contact at 22,000 feet, at a distance of 200 miles.

Minutes later, the lead Tomcat has visual contact and initiates a 180-degree turn to the left to position its plane parallel to the Bear and at a higher altitude, followed by its wingman. When the Russian crosses the carrier battle group defense zone, he suddenly banks to the right and loses altitude to take pictures of the "Ike," interrupting landings on the carrier as it crosses the path of aircraft on final approach.

The game is over in a few minutes and the Bear escapes toward the Arabian Sea and the coast of Iran, escorted by another pair of F-14s.

* * *

Until the early 1980s, this interception scenario would have seemed unthinkable to military experts. In 1970 the United States had a total of three destroyers patrolling the Indian Ocean. Today, the U.S. presence amounts to one complete carrier battle group—a total of about five to ten ships—belonging to either the Sixth Fleet or Seventh Fleet and under the command of Pacific Fleet Headquarters. The change came about under the Carter Administration as a result of the Soviet invasion of Afghanistan and originally called for the dispatch of two complete carrier battle groups to the Indian Ocean area.

The Soviet Navy's involvement is comparatively modest, comprising two destroyers and two frigates commanded by a cruiser.

However, the number of support units deployed by the Soviet Union slightly exceeds that of the United States with 16 of those operating in the Indian Ocean versus 15 U.S. vessels.

Britain, the former major naval power in the area until 1960, also retains some naval units in the ocean but is supplanted by France with the support of its African allies.

Although the maritime presence of the United States and its European allies seems unconditionally superior, it is easily upset by the Soviet military presence in Afghanistan and the relatively short distance separating the Soviet Union from the Indian Ocean area. The Soviets could challenge the apparent U.S. superiority in times of crises by dispatching important air and land forces to the area.

They currently have ten divisions stationed in Afghanistan, and about 100 aircraft and helicopters to support them. If the situation worsened, the airstrips in the southern tip of the country could be turned into major air bases from which strikes against U.S. vessels would be possible, including, of course, attacks by Soviet "Backfire" aircraft.

Moreover, the lack of warships bearing the white flag in the Indian Ocean conveniently allows Soviet leadership to accuse the United States of imperialist expansionism, driven by the desire to gain the support of the countries bordering the ocean.

From time to time, a major Soviet vessel will be sent to the ocean to "show the flag" but will spend most of its time in port because supplying ships in this remote part of the world has proved costly, as the United States has discovered throughout successive deployments.

What motivates the United States in improving its defenses in the area with such vitality? There are four basic reasons put forward by successive administrations to justify a U.S. presence in the Indian Ocean:

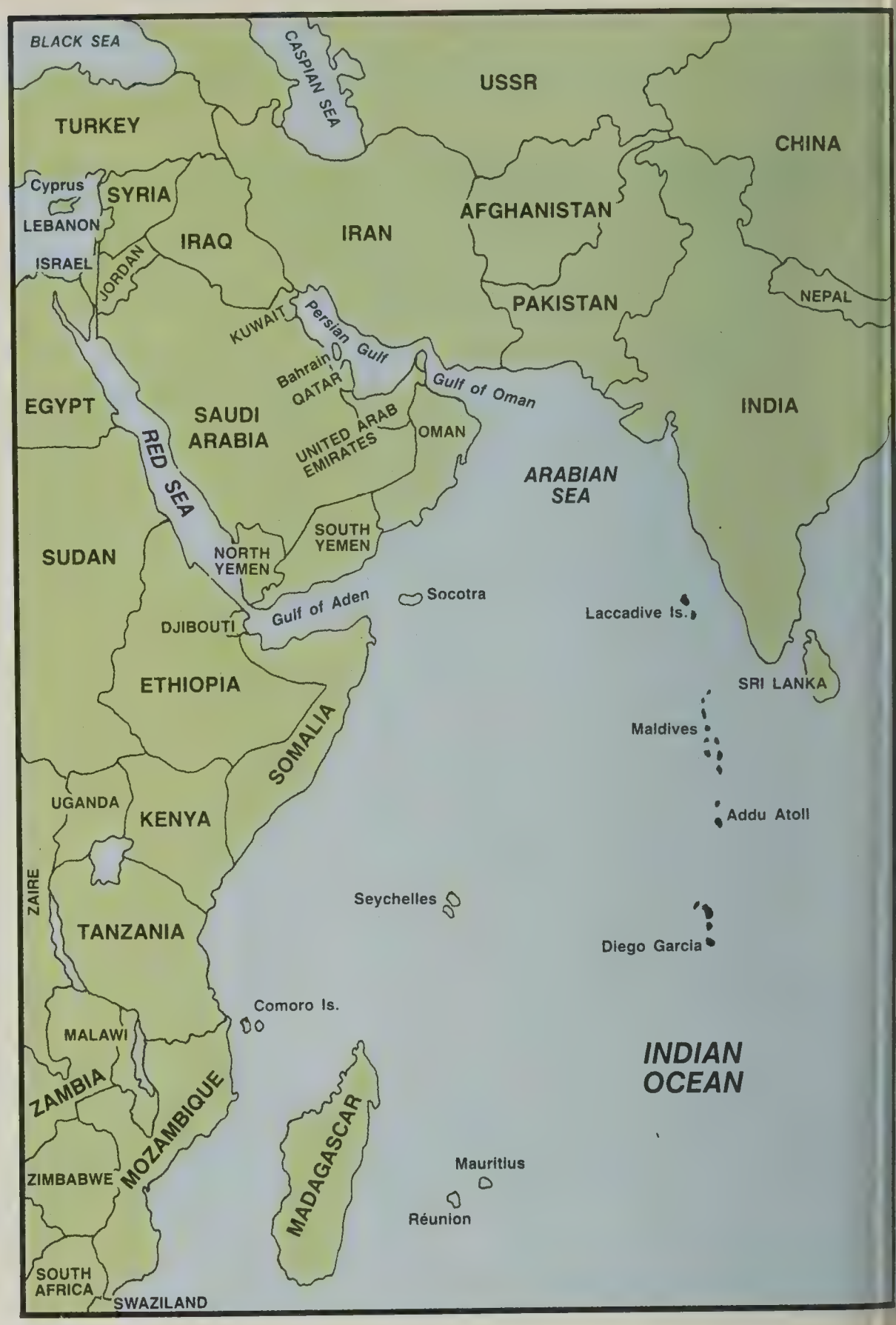
■ First, the United States wishes to contain the Soviet Union's expansion in the area, highlighted by the brutal invasion of Afghanistan in December 1979. From their position in Afghanistan, the Soviets could try to move into Iran, a territory they had occupied in 1946 and evacuated only after President Harry S Truman issued them an ultimatum.

The Carter Doctrine, enunciated by the President in his January 1980 State of the Union Address, warned Moscow that any further attempt to extend the Soviet Union's border south would be met with adequate means. The rapid deployment force (RDF) as well as the dispatching of U.S. carrier groups to the Indian Ocean were to be the backbone of this policy.

■ Second, the United States seeks to protect its interests in the Persian Gulf and those of Europe and Japan. It became clear after the oil crises of 1973 and 1979 that oil could be used as a major weapon against the West. The producing states of the gulf would therefore be dangerously exposed in the event of a conflict between NATO and the Warsaw Pact.

Japan alone is 90-percent dependent on oil imports and had to devaluate its currency in 1976 as a result of the first oil crisis. The United States imports 50 percent of its oil and consumes about half of the world's total production. The gulf states provide approximately 60 percent of the Western world's oil.

In addition, because Western Europe would be cut off from its Soviet oil and gas supplies in case of war, the strategic relevance of the gulf's oil fields would be



ERIC Y. BEAUDAN, a student of political science and international studies at the State University of New York at Buffalo, is writing a book on U.S. naval supremacy.

ncreased. A good example of this vital raffic is the number of ships that pass nrough the Strait of Hormuz: about 120 ankers every day. They would certainly ecome a prime target in a conflict.

■ Third, there is the need to protect ıe sea lanes linking Japan, Europe and ıe United States. Ships taking either the ape route or going through the Suez anal *en route* to Asia or America have) sail through the Indian Ocean before aching their destination. There they ould be prey to enemy submarines just ‹e merchants in the Atlantic were dur- g World War II.

■ Fourth, a likely goal of the United ates would be to make the Indian Ocean safe place for its nuclear submarines to erate. Improvements in the fuel capac- / of sea-launched ballistic missiles would able submarines hidden in the vast dian Ocean to strike deep within the viet Union's territory, although sub- arines located in the Atlantic, Pacific Mediterranean would be closer to their rget.

However, the current small Soviet pres- ce in the Indian Ocean would enable tected submarines to escape reprisals sier than in any other ocean.

The modest Soviet presence in the In- ın Ocean is justified by several factors sides the obvious will to match U.S. eriority.

■ Soviet support and encouragement subversion in Africa and Southwest ia, as well as political and economic ansion are factors. Soviet involvement the area was marked with the Cuban erations in Angola and has been fa- ed by several circumstances since 1960. tish and French colonies have been nted political independence, thus cre- ıg an important power vacuum filled ckly by missions from the United tes, the Soviet Union or China.

Because of political instability in Af- ı, several revolutionary groups are in- sted in receiving help from either the iet Union or the United States. White mes, which are generally viewed as stern-backed dictatorships, are an es- ially good target for revolutionaries.

Influencing the oil producing coun- s of the gulf and denying Western ac- to oil supplies in the event of a con- are Soviet goals. The proximity of the Soviet Union to the Persian Gulf and its drive in Afghanistan are two major factors affecting power relationships in the area. Although the Soviets have not yet had any clear success among the Arab nations, the unpopularity of U.S. support of Israel has hindered any serious cooperation between Arab nations and the West.

■ Further, the Soviet Union has as an objective obtaining access to warm-water ports to make up for the majority of Soviet harbors which are blocked by ice during the winter. Murmansk is the only ice-free port in the Soviet Union's territory.

Since it is not an ideal strategic location for a major wartime naval base, Soviet officials would like to control a warm-water port as soon as possible from which Soviet naval units could easily operate. Without such a port, the credibility of the expanding Soviet Navy could be seriously affected, which is a crucial factor in a garrison state such as the Soviet Union.

■ Protecting the sea lanes that link the western and eastern Soviet Union is another factor. Although the United States is the primary commercial user of the Indian Ocean, Soviet cargo ships traveling between Vladivostok and Odessa follow the same route during the winter months.

■ Exploiting the oceanographic resources of the Indian Ocean for military



U.S. Navy photo

The runway of the naval air facility on the island of Diego Garcia, the main U.S. base in the Indian Ocean, can handle the largest aircraft.



Hawk: the proven air defense syste

Now more than ever, the Raytheon-developed Hawk is a vital contributor to the U.S. Army's air defense needs. Thanks to a successful series of Product Improvement Programs (PIP's), Hawk's capabilities—and firepower—have been significantly increased. In 1985 Raytheon will be producing a more streamlined, more cost-effective Hawk system, a system capable of countering the threats of low-flying strike aircraft throughout the late 80's and early 90's.

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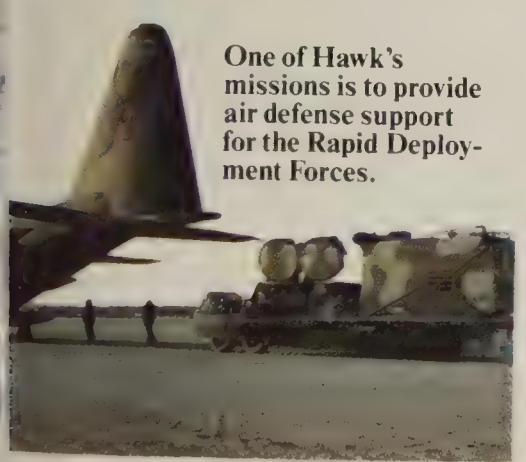
Primarily a low to medium altitude system, Hawk will continue to defend U.S. air bases and logistic complexes in Europe. Because of its versatility, it will also continue to play a key role with the U.S. Marines and the Rapid Deployment Forces.



at's always up-to-date.

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One of Hawk's missions is to provide air defense support for the Rapid Deployment Forces.

Raytheon



A U.S. carrier battle group has patrolled the Indian Ocean since January 1980: here, the U.S.S. Eisenhower (left) *relieves the U.S.S.* Nimitz *in May 1980, after the latter's record-breaking initial deployment.*

and civilian purposes is important to Soviet objectives. The Soviet Union has maintained a substantial number of research facilities in the ocean since the late 1950s. The Indian Ocean is the most convenient place for the Soviet Union to conduct such experiments because, again, it has little access to warm-water ports.

The sudden interest of the two superpowers in the Indian Ocean has led to a race for bases which involves all those neighboring countries likely to host a military base in their territory. France has access to bases in Djibouti, the Comoro Islands, Madagascar, Réunion and the Seychelles.

In the wake of decolonization, the Soviets have systematically taken over the bases evacuated by the British in the area. They successfully achieved this in South Yemen and the Republic of Maldives.

When they switched their support from Somalia to Ethiopia in 1977, the Soviets ensured that they could have access to bases at Massawa and Assab on the Red Sea, as well as a port on the Dahlak Archipelago, off Eritrea, to offset the loss of the naval base at Berbera, Somalia.

On the Dahlak Archipelago, they are now substantially improving facilities for submarines. Installations for cruise missile storage and repair stores are also under construction. The Soviets retain access to Socotra, an island located at the entrance of the Red Sea belonging to South Yemen.

Although these bases appear numerous and have been upgraded by the Soviets to accommodate large units, their importance is easily diminished because of their location.

They are concentrated in one tiny area, the entrance to the Red Sea, and therefore do not give the Soviet Union the advantage of multiplicity it would like to have.

South Yemen directly faces Ethiopia to the southwest. The ports of Massawa, Dahlak and Aden are separated by a mere 400 miles, while the closest Soviet naval base east of the Indian Ocean is located at Cam Ranh Bay in Vietnam.

In contrast, the United States has established a complex network of bases on the Indian Ocean. Its first major gain occurred in 1977 with the expulsion of the Soviet Navy from the port of Berbera, opposite the Soviet facility at Aden and adjacent to the French port of Djibouti.

In the Persian Gulf area, the United States can freely operate from ports belonging to Bahrain and Oman. On the southern coast of Africa, a facility has been planned in Kenya, while the Soviets are unable to station their ships in Mozambique because of the lack of harbor installations on the country's shoreline.

Since the closest U.S. base east of this point is in Western Australia, U.S. officials have decided to renovate the facility at Diego Garcia, an island located 1,000 miles south of India and as much in the middle of the Indian Ocean as Midway Island is in the Pacific.

The once-forgotten coral island is now undergoing construction of a major runway to accommodate a squadron of B-52s. Barracks for up to 12,000 sailors are being erected. Permanently stationed there are 1,800 Marines to assist in any conflict in the Middle East.

President Reagan has allocated $106.4 million for a base off Saudi Arabia and $75 million for a newly acquired base in Oman. This was preceded by the launching by the United States in 1981 of the first satellite dedicated to the surveillance of the Indian Ocean.

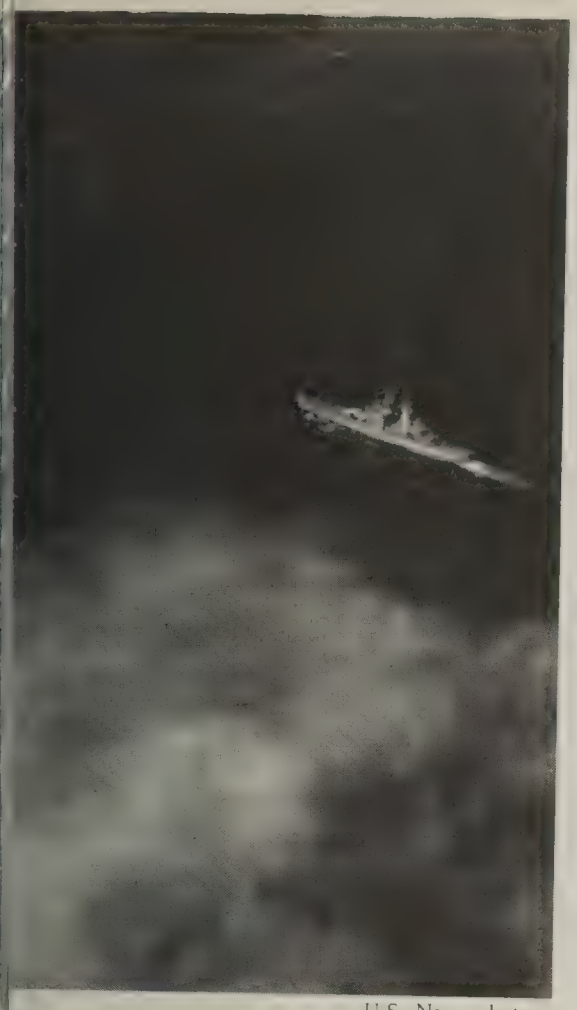
India and Sri Lanka would be strategically relevant if either of the two superpowers were able to convince them to host foreign military bases. But the official policy of nonalignment carried out by Prime Minister Indira Gandhi, and likely to continue under the new Indian leadership, coupled with the fact that the country refuses to receive nuclear-weapon-carrying ships, preclude such opportunity.

In addition to these bases, the United States is relying on two weapons to dominate any eventual conflict in the Indian Ocean or Persian Gulf area: its powerful aircraft carriers, which can be considered mobile bases, and the rapid deployment force. The former are certainly more reliable than those countries that accept American bases but are subject to coups.

A *Nimitz*-class carrier can carry up to 100 planes and strike any point within a 300- to 500-nautical-mile radius with conventional or nuclear weapons. The recent dredging of the Suez Canal by Egypt allows such 90,000-ton carriers to use the canal between the Mediterranean Sea and the Indian Ocean, making the presence of Sixth Fleet units more feasible if required.

While carriers basically represent a "local" factor, the RDF operates directly from U.S. territory.

The major problem with the RDF is



U.S. Navy photo

at it would take about three weeks to t into the action, making it necessary rely on local elements in the early ges of a conflict.

The force consists of five divisions aling 200,000 men, tactical forces and e squadron of B-52s conventionally ned.

Because of the distance between the ited States and the Indian Ocean, emasis is being put on prepositioning ipment for the RDF across bases in Indian Ocean.

Diego Garcia has been elected as the mary base; 15 ships loaded with supes and equipment are waiting to meet rine units if the need arises. Although level of readiness of the 24 divisions ed in the Soviet Caucasia region reins doubtful, they would probably try move into the area before a U.S. air could be completed.

Despite the growing Soviet threat and need to protect the gulf region from her invasions, the number of U.S. cars patrolling the Indian Ocean has been uced to one after rising costs and supproblems. Because of distances, ships loyed to the Indian Ocean have to be owed constantly by supply vessels to ure operation of the task force.

This is where the advantage of nuclear iers makes a difference. The only fuel need is aircraft kerosene, while othconventionally propelled units must ive their fuel supplies directly from gulf region.

The weather encountered in the ocean substantially adds to the problems. Sand from shore is carried by the wind a distance of 200 miles during the monsoon months, damaging painted surfaces and electronic equipment aboard ships.

Mail, orders from the Pacific Fleet Command and spare parts follow an unusual route from the western United States to Clarke Air Force Base in the Philippines, then to Diego Garcia where small planes will transport them to Masirah Island.

There, helicopters from the carrier pick up the material and the cycle is complete. It costs $433,000 a day to perform this routine and explains why the American presence has declined recently and why the Soviets are reluctant to increase theirs.

Sailors on the task force's ships also suffer from the hot and humid weather and the lack of port calls. Indian Ocean deployments have earned the distinction of being the longest in U.S. naval history.

U.S.S. *Nimitz* was the first nuclear carrier to be dispatched to the Indian Ocean along with the nuclear cruisers *California* and *Texas* in January 1980. The carrier battle group broke a World War II record by staying 144 consecutive days at sea.

When the carrier battle group returned to Norfolk, Va., on Memorial Day, 1980, it was greeted by President Jimmy Carter, his wife and several members of Congress, who came to show their sympathy and support for the exhausted crew.

Journalists have not been allowed on Indian Ocean-bound vessels since 1979. Sailors commonly refer to their fleet as the "forgotten fleet" and Diego Garcia was nicknamed "Fantasy Island." "Beach of steel" is the expression often used to describe the carrier flight deck during the two-day rest sailors are given every month.

Will the Indian Ocean continue to grow in importance or is it just the victim of a temporary race for bases between the two superpowers, likely to be forgotten when apparent stability develops?

Predictions tend to support the view that its importance will increase in time. Middle Eastern countries still own about 49 percent of the world's estimated oil reserves for a period of up to 30 years, and if no alternative source of energy is developed in the meantime, they will continue to be a global pole of attraction.

If the Soviet Union decides to consolidate its presence in Afghanistan, it will be only too tempting for them to try to expand toward warmer waters. If that time comes, the Indian Ocean may be transformed into an ideal platform for a naval superpower confrontation.

Just Coincidence?

The city of San Antonio, Tex., has long been associated with military life. In the 1970s, it was the home of a garbage disposal company whose logo, "Good Riddance," was proudly and boldly displayed on the huge tanks of its garbage trucks. Ft. Sam Houston is centrally located in the city, so it was not unusual to see a "Good Riddance" truck on or near post.

In the mid-1970s, a ceremony was held for a retiring general officer on the parade field of the old artillery post area of Ft. Sam Houston. The ceremony was filled with traditional military honors and pageantry, including a helicopter flyby and a ceremonial troop of horse cavalry from Ft. Hood.

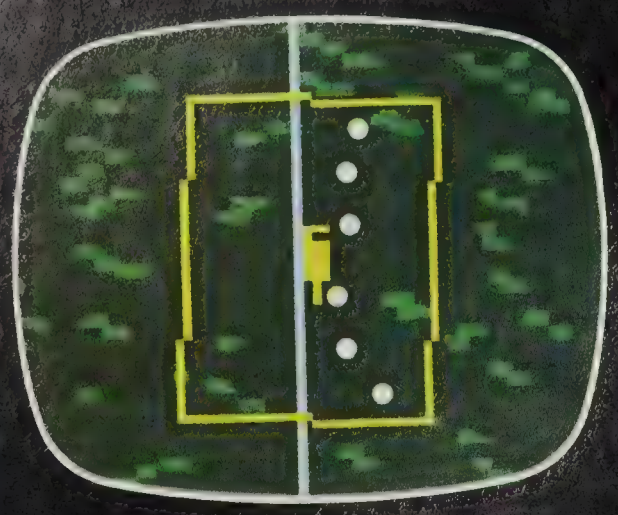
As the cavalry troop passed in review, a banner reading *"Adios Amigo"* was unfurled down the side of a covered wagon accompanying the troop. A moment later, a helicopter hovered while its crew chief unfurled a banner wishing the general "Good-bye and Good Luck." No sooner had the chopper flown off the parade field, than what should appear along the street directly across the parade field from the reviewing stand?

As if rehearsed, an uninvited garbage truck with its "Good Riddance" glaring above a hedgerow paraded parallel to the line of march. It was not apparent that the good-natured general even saw the blooper, but the size of the truck and its timing would have made it hard to miss from the reviewing stand.

Although the incident did not detract from the beautiful tribute to the general, there was widespread laughter in the audience as many wondered if it were just coincidence, or if some mischievous junior officer or NCO had planned it that way.

MAJ. JERRY D. RODGERS

ARMY will pay, on publication, from $10 to $35 for true, first-person anecdotes. Contributions will be returned only if accompanied by a S.A.S.E.



JOINT STARS

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Cerebrations

Starting a Desk-side Library: The Essential Reference Books



You have just returned from morning physical readiness training and are cooling down after a four-mile run. Now you are thinking about the day's schedule. There is the meeting with the commander to brief the platoon's training plan for the next quarter. Then you need to write a senior enlisted evaluation report, draft answers to two letters of indebtedness and finish writing the draft standard operating procedure (SOP) on loading the unit's equipment on rail cars.

Finally, you have to finish writing a permanent change-of-station (PCS) award recommendation, and two letters of appreciation for those soldiers who drove 1½-ton trucks all night to get the platoon back from last week's field training exercise. It seems like a lot of writing.

You need to find the format for the type of briefing used at the battalion commander's training meeting and those used for writing unit SOPs, award recommendations and military letters to civilian companies.

In writing all this, you must, of course, check your spelling and the definitions of several acronyms.

If this sounds like the beginning of too many of your days, then you may be spending valuable time searching for the right paper, manual or guide, which, annoyingly, always seems to be located somewhere else.

You can save time and improve your work by establishing a small, personal desk-side reference library which should include a variety of general and professional reference books.

As a writer, you can enhance your writing skills by having near your desk general reference books such as a dictionary, thesaurus and style manuals.

As a military professional you can improve your letters, plans, directives and requests by using such general professional references as the *Staff Officer's Handbook, The Army Officer's/Noncommissioned Officer's Guide* and certain field manuals.

Starting a reference book collection does not mean that you should collect every book or manual you think you might ever use in your career. "Bulk collecting" just increases your weight allowance on PCS moves. The personnel administration center or the post professional libraries collect, shelve and update manuals regularly and more efficiently than you can.

Rather, a collection of ten to 15 general and military reference manuals will help you save time and sharpen your writing skills. This in turn would allow you more time to get out of the office and on to other activities.

Suggested here is a basic list of general and military reference books. It is divided into four areas: dictionaries, thesaurus and writing aids, military reference books, and military magazines and professional journals.

■ *Dictionaries.* Recommended are the latest edition of *Webster's New Collegiate Dictionary* (G. & C. Merriam Co.) and *The MIS-SPELL-ER'S DIC-TIO-NAR-Y* (Simon & Schuster Inc.).

■ *Thesaurus and writing aids.* Recommended for its extensive list of synonyms is *Roget's International Thesaurus,* 4th ed. (Thomas Y. Crowell Co.)

Style manuals help writers by showing standard formats and ways to simplify and improve writing.

On Writing Well: An Informal Guide to Writing Nonfiction, by William Zinsser (Harper & Row, Publishers Inc.), is geared to college-level students and calls attention to such "common quagmires as clutter, jargon, journalese, imprecision and disarray." The author emphasizes freshness and strength in style development.

Also recommended is *USAIS Writer's Handbook,* Part I, ST 7-186-FY80 (U.S. Army Infantry School), a military manual which sets forth important rules, techniques and philosophies of effective writing that specifically relate to the military.

Army Regulation 340-15, *Office Management, Preparing Correspondence* (Headquarters, Department of the Army), explains in detail Army procedures, formats and examples of established correspondence methods.

Staff Officer's Handbook, RB 101-999 (T) (U.S. Army Command and General Staff College), is a compendium of other Army reference books and documents. Designed to provide the staff person with frequently used information on fighting the AirLand Battle, it contains illustrations, sample format organization and weapons data, logistics reference data, and other staff action formats and procedures.

■ *Military reference books.* Like lawyers who keep copies of court cases in their office files or computer programmers who keep different operating system manuals at their work stations, the military professional needs to have certain military references within easy access. These reference books can be of a general or technical nature.

The Army Officer's Guide, by Lawrence P. Crocker, 42nd ed. (Stackpole Books), is of a general nature and provides advice to junior officers who are just entering the Army and for people contemplating becoming commissioned officers. The book is divided into four parts explaining military courtesy, uniforms, customs and social aspects, and providing brief descriptions of the typical activities of junior officers.

The Officer's Family Social Guide, by Mary Preston Gross (Beau Lac Publishers), is also a general guide and answers questions pertaining to traditions and customs of the military services. Part of this book is directed to the officer's spouse, but it also details courtesies and protocol the commissioned officer needs to know and includes chapters on flag courtesy, social functions, and receptions and receiving lines.

Officer's Manual of Personal Finance and Insurance, 3rd revised ed., edited by James R. Golden and William R. Taylor (Stackpole Books), is a general guide designed to assist the officer in evaluating and understanding military pay. The text acquaints the officer with information and techniques for handling financial management problems successfully.

Military Travel Guide (Y. Raisor Publishers) is a general guide to military facilities worldwide. Specifically, the "MTG" provides emergency information; that is, medical, dental, legal, auto repair and check-cashing services available at over 250 military installations. Also provided is a listing of civilian hotels and motels that offer military members and their families accommodations at "military rates."

Recommended military reference books of a technical nature include Army Regulation 10-5, *Organization and Functions—Department of the Army*, 1 December, 1980. This regulation outlines the general organization of the Army and includes descriptions of major units' missions and their overall functions.

Field Manual 21-20, Physical Readiness Training (Headquarters, Department of the Army), 31 October, 1980, provides guidance on the planning, conduct and evaluation of physical readiness training.

Field Manual 21-30, Military Symbols (Headquarters, Department of the Army), 6 May, 1970, provides the authorized symbols used in military plans, orders, maps and charts.

Field Manual 22-51, Drill and Ceremonies (Headquarters, Department of the Army), 12 November, 1971, is the bible for Army drill and ceremony. It provides guidance for Army-wide uniformity in the methods of instructing drill, teaching techniques for individual and unit drill, ceremonies and manual of arms.

Field Manual 100-1, The Army (Headquarters, Department of the Army), 14 August, 1981, covers the fundamental principles governing employment of Army forces in support of national objectives. As Gen. Edward C. Meyer, former Army chief of staff said, "A careful reading and thorough understanding of this manual will enhance our ability to perform our individual jobs in operational situations and cause us to scrutinize constructively those basic but critical assumptions underlying our plans."

Field Manual 100-5, Operations (Headquarters, Department of the Army), 20 August, 1982, is the Army's keystone "how to fight" manual. It explains how the Army must conduct campaigns and battles in order to win. Descriptions are included of the Army operational doctrine involving maneuver, firepower, movement, combined arms warfare, and cooperative action with other services and allies.

Field Manual 100-10, Combat Service Support (Headquarters, Department of the Army), 1 January, 1983, is an overview of combat service support (CSS) to the Army in a field environment. Specifically, it addresses CSS at division, theater army and corps levels and gives an overview of the way combat service support does its job.

Field Manual 54-10, Logistics (Headquarters, Department of the Army), 1 April, 1977, presents an overview of the Total Army logistics system—what it is and how it operates. The information is broad in scope and general in nature, and is presented in clear and simple terms. The manual's emphasis is given to the operation of the logistics system in the field and the wholesale aspects of logistics that directly influence mission accomplishment.

■ *Military magazines and professional journals.* As military professionals, we need to keep abreast of the changes and issues in the profession. One excellent way to maintain currency is to read military journals or magazines regularly. Some have information you may wish to keep at your desk until it is published in a more permanent form. Listed here are a number of the journals and magazines of the profession, to which you may consider subscribing.

ARMY magazine is published monthly by the Association of the U.S. Army, Arlington, Va. A subscription comes with a one-year $16.00 association membership. It contains up-to-date, general professional articles and book reviews, and is devoted to the advancement of the military arts and sciences, representing the interests of the U.S. Army.

Military Review is published monthly by the U.S. Army Command and General Staff College, Ft. Leavenworth, Kan. A subscription is $14.00 a year. This is an approved Department of the Army publication featuring articles on military subjects worldwide. Articles are written by Command and General Staff College instructors and students.

Parameters, Journal of the U.S. Army War College, is published quarterly by the U.S. Army War College at Carlisle Barracks, Pa. Subscriptions are free to most military professionals. *Parameters*, a "journal of ideas," provides a forum for the expression of professional thought in the art and science of land warfare, national and international security affairs, military history, military strategy and military leadership.

There are a number of different Army branch journals which present authoritative and practical articles on topics relating to general military and branch-specific areas. Published by the branch schools, they are excellent sources of current information on everyday issues. Subscriptions are free and the journals are regularly distributed on most Army installations. Writing to the branch school or seeing your publications specialist can assist you in receiving a subscription or distribution direct to your unit.

CAPT. DANIEL IMHOLTE□



"New on the market—a hunter-to-moose missile!"

Branch Needs To Develop Leadership

Is the aviation community providing its future leaders with the solid foundation necessary to command the soldiers of the most dynamic branch of the Army? The question is being asked more often lately, and the answer may be no.

In order to sustain the momentum Army aviation has enjoyed in recent years, strong leadership is essential. Systems such as the Blackhawk and Apache, and the light helicopter, experimental (LHX) program dictate a need for quality people. Aviation as a branch is in its infancy and is under close scrutiny.

This critical appraisal stems from fear of formation of another Air Force to fear of losing touch with the ground commander. Although one may argue the validity of these concerns, the paramount issue is the development of Army leaders.

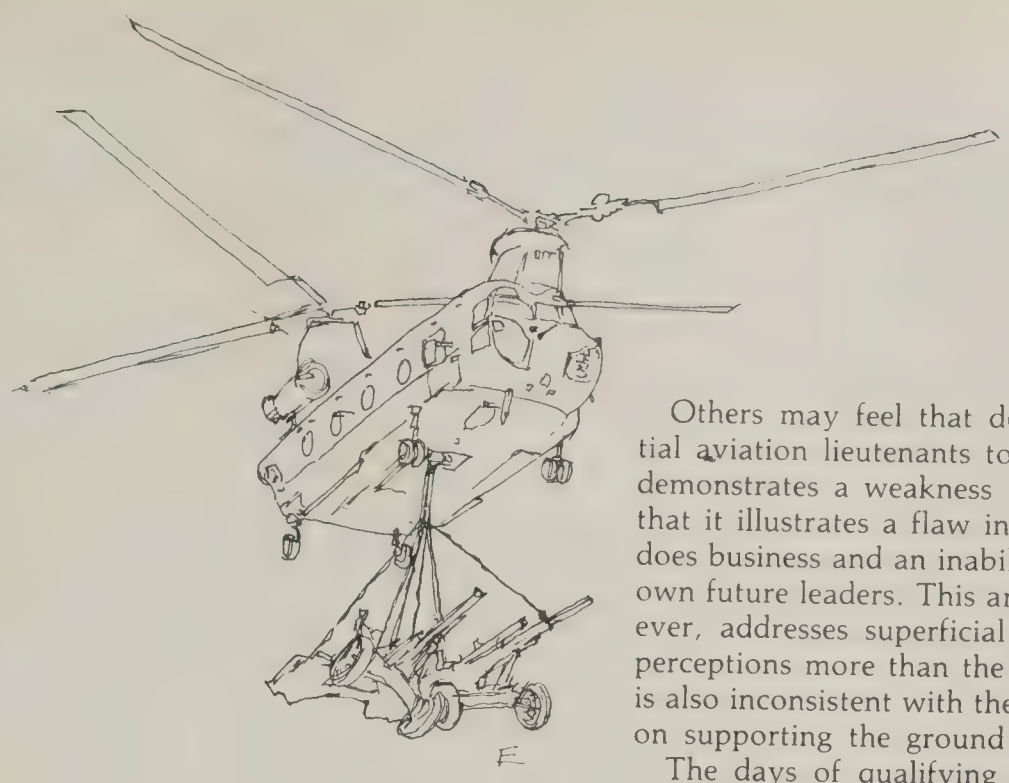
The young aviation lieutenant is required to be both a technician, like his warrant officer counterpart, and a leader, like his infantry peer. He spends almost a year in aviation training learning the necessary technical skills and a substantial number of tax dollars before he reports to his first unit.

Although he receives fundamental leadership training from his source of commissioning and through his attendance at the Aviation Center's officer basic course, he is thrust into his first unit as a platoon leader or, if he is lucky, a section leader. These are jobs that demand both an aviator and a leader.

The basic problem is in the process of developing the leader. Experience has demonstrated that the early years of commissioned service are essential in establishing the necessary leadership foundation which will provide the basis for the officer's entire career. During these years, the lieutenant concentrates on leadership skills and enhances those skills by developing a close rapport with his platoon sergeant and squad leaders. These experiences cultivate a thorough understanding of the soldier, his hardships and his needs.

The aviation lieutenant is confronted with an additional set of challenges during the formative years. His emphasis must be directed toward mastering the technical skills of aviation. Once he has earned his rating, his learning has just begun. Regardless of his inherent ability to lead, his energies are then split between the personal and professional challenge of honing his piloting skills, and the legal and moral obligation to lead and care for his soldiers. This is a unique relationship that no other service demands of its junior aviation officers.

To ensure that the aviation lieutenant



is part of an environment where he can cultivate leadership skills, his initial year of commissioned service should include detail in either the infantry, armor, field or air-defense artillery branches prior to flight training. This is not a revolutionary idea. In years past, branch detailing was a prerequisite for any officer seeking a commission in a noncombat arm of the Army. According to this plan, the aviation lieutenant is allowed time to develop his leadership skills and, of equal importance, to gain an appreciation for the branch to which he is detailed.

This is not to suggest that one must serve on the ground in order to know how to support ground elements. What is important is the fact that ground units such as infantry, artillery and armor focus on developing leaders down to the lowest rank and the aviation lieutenant benefits by becoming part of that process. But there is a price he must pay for this experience—his time.

Some will argue that by the time the lieutenant has completed his branch detail and initial aviation training, he will have at most two years as an operational aviation lieutenant before promotion to captain. However, even under aviation's recent restructuring, the lieutenant has ample time to prepare for company command.

On the other hand, if he pursues an Apache transition, he could conceivably pin his captain's bars on shortly after completion of the training. In light of these circumstances and coupled with the extensive attack aviation experience required for an Apache transition, it may be appropriate for the AH-64 units to evolve into major (O4) commands, analogous to the major-level Pershing missile commands in the artillery branch.

Despite how force structure appears in the final analysis, the issue is training the leader—a leader who will be productive in his early years as well as his later years.

Others may feel that detailing potential aviation lieutenants to combat arms demonstrates a weakness in the branch, that it illustrates a flaw in how aviation does business and an inability to train its own future leaders. This argument, however, addresses superficial concerns and perceptions more than the basic issue. It is also inconsistent with the Army's focus on supporting the ground commander.

The days of qualifying an aviator as an infantryman, tanker or artilleryman are long past, and rightfully so. With systems like the Apache, which requires months of training, there is little time left to train in any arena but aviation. The sophistication of today's aviation technology is such that an officer is no longer able to lead an infantry company one day and climb into a cockpit and fly away the next.

Yet, the aviation lieutenant is expected to mature into an aviation company, battalion and brigade commander who will not only compete for scarce resources with his combat arms peers, but, equally critical, must be responsive to their needs. Through initial branch detailing the aviation lieutenant would receive the needed preparation and would be provided an invaluable insight into the workings of the Army.

And how about the officer who does not experience ground duty? Does that make him a poor leader? The answer is no. The warrant officers who accepted direct commissions and the commissioned officers who have flown since day one attest to that. But we can do better by providing a solid foundation and producing leaders who are more responsive and sensitive to the ground commander's needs. After all, that is what Army aviation is all about.

MAJ. LAWRENCE E. CASPER□

CAPT. DANIEL IMHOLTE, a branch chief at Headquarters, MTMCWA, Oakland Army Base, Calif., was an assistant professor of military science at Northern Michigan University, Marquette, Mich.

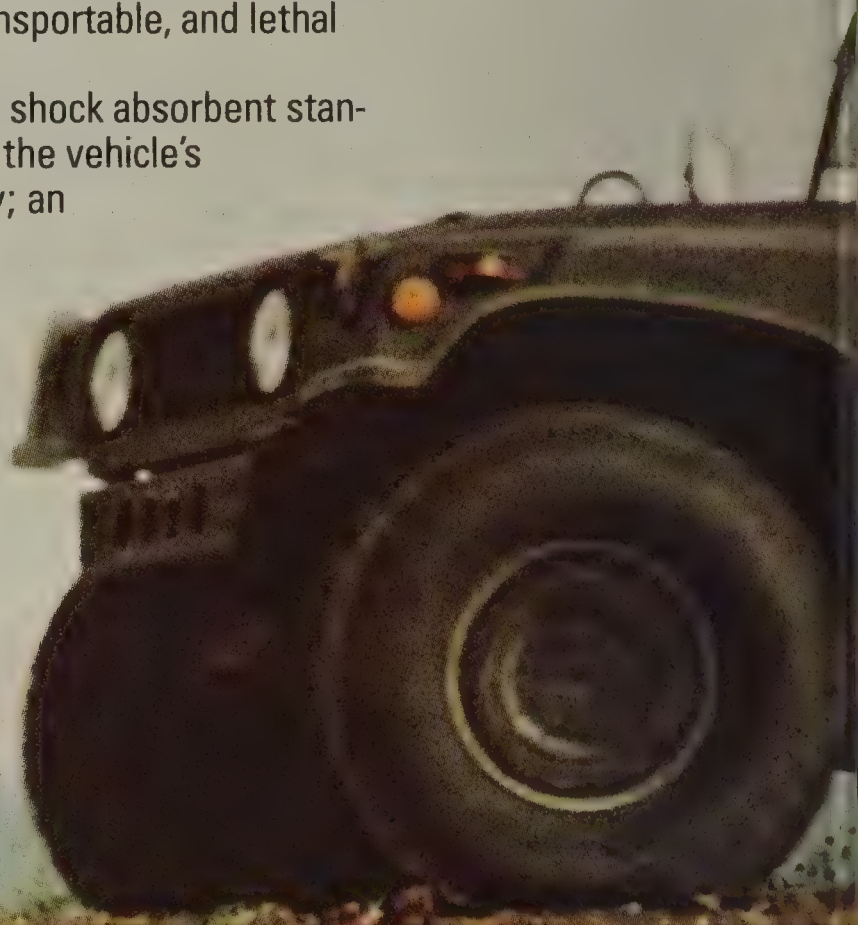
MAJ. LAWRENCE E. CASPER has commanded both aviation and ground units and has served as a combat aviation battalion S3. He is currently with I Corps headquarters, Ft. Lewis, Wash.

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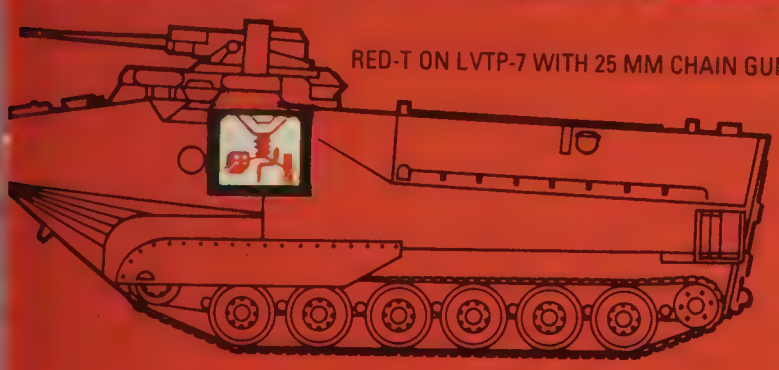
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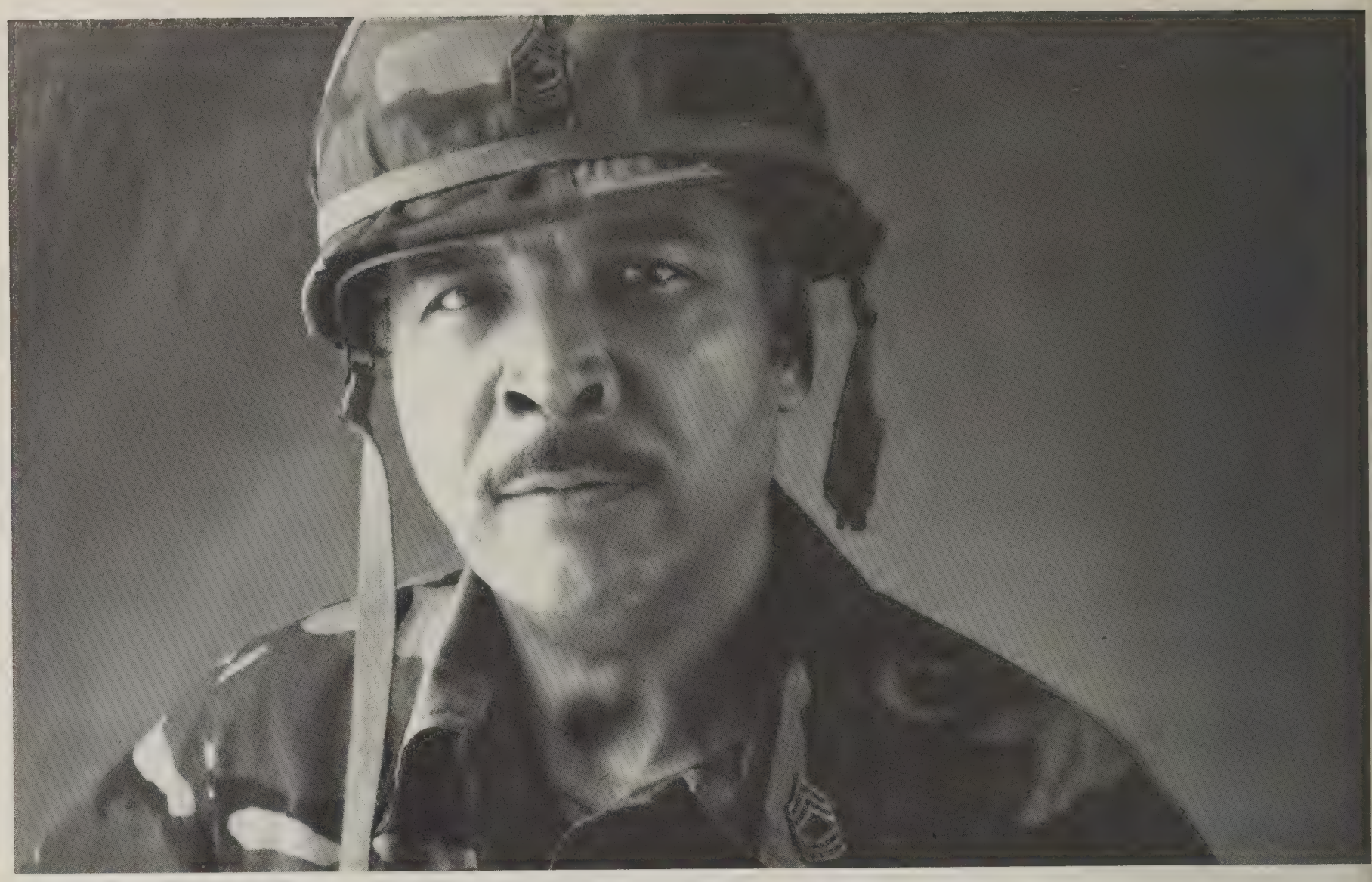
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romotion Point Worksheet Revised

The revised promotion point worksheet (DA Form 3355) for romotion to E5 and E6 is being sent to the field and will go to use in May for E5s and June for E6s, according to the rmy's Military Personnel Center (MILPERCEN). The revised rm, which was put together at the direction of the Office the Deputy Chief of Staff for Personnel, emphasizes physi- l fitness, self-discipline, professional competence and a com- itment to self-improvement and achievement.

The changes on the new form are:

- The commander's recommendation will be part of the rm and separate correspondence will not be required.
- Possible promotion board points have been decreased om 250 to 200.
- Duty performance points, awarded by the commander, ve been increased from a maximum of 150 to 200.
- Points for the skill qualification test (SQT) have been creased from 150 to 200. Soldiers will not earn points for QT scores below 60.

TheBulletin Board

- Education points will fall into two separate categories. here education was collectively worth 200 points on the old m, now soldiers can earn up to 150 points for military edu- ion and 100 points for civilian education.
- The form now includes up to 100 points for military ining, which consists of individual weapon qualification d the annual physical readiness test.
- Time in service and time in grade, worth as many as) points each on the old form, have been eliminated. Sol- rs will not earn points for on-the-job experience or high ool completion.

aternization Policy Eased

The Army has liberalized its policy on fraternization among diers of different ranks and attempted to clarify the rules matters that have vexed commanders in an era of changing ial *mores*.

n a letter to all commanders down to battalion level, the n-adjutant general, Maj. Gen. Robert M. Joyce, stated that mmanders are to intervene only in those relationships that l create an "actual or clearly predictable adverse impact" discipline, authority or morale within the command. The on fraternization, Army Regulation 600-20, had prohibit- relationships between soldiers of different ranks that could sonably be expected" to undermine discipline, authority or ale.

)ne of the goals of the policy change, according to the let- is to "address the behavior that results from the relation- . . . and not merely the relationship itself." The letter ed that the Army's policy is one of tolerance in matters of ng and other social relationships.

or a relationship to be considered improper, it would gen- ly have to involve a situation in which one party holds osition of authority or influence over the other, as in the 's of members of the same unit or within the same chain ommand.

The Army has not yet provided specific guidance on how commanders should respond to violations.

Results of Sp5/Sp6 Review Expected

The Army's Training and Doctrine Command (TRADOC) will present recommendations to the Office of the Deputy Chief of Staff for Personnel (ODCSPER) late this spring, following a branchwide review of specialist five and specialist six requirements in the Army.

Elimination of specialist ranks for soldiers above the grade of E4 has been under consideration for the past two years, with particular emphasis on the combat arms specialties. TRADOC has been reviewing the issue for the past several months as part of its examination of the enlisted personnel management system and expects to complete the review by June.

ODCSPER officials saw the review as an ideal opportunity to move forward on this much discussed subject and are pushing for an early recommendation, according to a spokesman from that office. One of the primary stumbling blocks to gaining approval for elimination of the specialist ranks has been opposition from the branch schools. TRADOC is consulting with the branch proponent agencies to determine if strong opposition still exists.

New EER/OER Review Boards

In an effort to standardize procedures and provide comparability for officer and enlisted evaluation report appeals, the Army has established an enlisted special review board. "Both boards will process and adjudicate appeals submitted by members of the total Army and will include in their membership representatives for the active and reserve components," noted officials at the ODCSPER. To ensure uniformity, both officer and enlisted review boards will report to one overall president.

These special boards will come under the direct operational authority of the director of military personnel management, ODSCPER. The Army regulations (ARs) which established the new board, AR 623-105 (for officers) and AR 623-205 (for enlisted soldiers), have also standardized the appeal procedures for both officers and enlisted soldiers.

The new regulations make clear to potential appellants that the local staff judge advocate is available to advise them on the preparation of appeals.

Letters of instruction have also been filed with enlisted promotion and school selection boards, emphasizing that no adverse inference should be drawn from the fact of an unsuccessful appeal or from the revision or omission of a document in the soldier's personnel file as a result of a successful appeal.

The issuance of these letters brings the practice for enlisted boards into line with those for officers, where such instructions were already in effect.

Preference Statement Expanded

Enlisted soldiers now have an enlarged and streamlined preference statement (popularly known as the "dream sheet") for requesting specific types of duty assignments or locations.

The revised statement (DA Form 2635) contains items concerning the married Army couples' program, the exceptional family member program and spouse employment. In addition to considering the special needs of the soldier's family, the new form includes boxes for expressing traditional preferences such as areas of assignment overseas and in the continental United States, the length of tour desired, special duty assignments or professional development schools desired.



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Army Anticipates a Major Role In New Unified Space Command

The Army is preparing to take an active role in space operations following an announcement by Secretary of Defense Caspar W. Weinberger that President Reagan has authorized activation of a new unified space command, known as the U.S. Space Command (USSPACECOM).

Authorization of the new organization comes at the recommendation of the Joint Chiefs of Staff (JCS) and the secretary of defense. USSPACECOM was created to "better serve U.S. interests and the needs of our allies worldwide by providing an organizational structure that will centralize operational responsibilities for more effective use of military space systems," said a Defense Department spokesman.

"The Department of Defense uses space systems to preserve our national security by performing such functions as communications, weather forecasting, navigation and warning," the official added. Not specifically mentioned were the two most important military uses of space—satellite reconnaissance of all kinds and defense against long-range strategic nuclear weapons.

In September 1982, the Air Force Space Command was formed, and in October 1983, the Navy established the Naval Space Command. Defense officials describe the new unified space command, with Air Force, Navy, Army and Marine Corps participation, as "the next evolutionary step."

The Army established its own committee on space policy, the Army Space Council, on 1 August, 1984. The council is chaired by the Army vice chief of staff, Gen. Maxwell R. Thurman. The council's mission, according to its charter, is to provide policy recommendations and guidance for Army space-related activities. In particular, the Space Council will consider policy concerning the Army's current role and activities in space, the Army's future role in space, the Army's role in a unified space command, future Army space organization and other Army space-related requirements as appropriate, to include but not limited to doctrine, communications-information, intelligence, weapons systems, defenses and research and development."

The Army Space Council receives staff presentations and recommendations from the Army Space Working Group, a formal panel consisting of action officer representatives from all Army staff agencies with space-related activities and advisor representatives from appropriate major commands.

Administrative support and normal staff arrangements to support the Army Space Council are coordinated by the Army Space Office in the Strategy, Plans and Policy Directorate of the Office of the Deputy Chief of Staff for Operations and Planning (ODCSOPS). The chief of the Army Space Office will serve as executive secretary for the council.

In December 1984, Brig. Gen. Howard D. Graves, the deputy director of the ODCSOPS directorate, discussed the role of the Army in space as the theme of an address before the American Astronautical Society in Washington, D.C.

News Call

Gen. Graves described ways in which the Army is using space systems in the field today, emphasized the importance of exploring developing technologies in this area and indicated how the Army is organizing to ensure continued efficient use of space.

"Space systems are vital to the conduct of land warfare today," said Gen. Graves, "because the information and the exchange of information necessary for us to fight today depends on satellites. Our requirement for rapid assessment and our global areas of concern cause us to rely more and more on remote sensing, timely warning and reliable long-distance communications provided through space.

"Communications satellites share with weather satellites the distinction of being the most developed for application with land forces," explained Gen. Graves. "We now rely on satellites for continuous weather observation and they are more accurate and timely than ever before," he added.

"The satellite communications function is the Army's largest ongoing space activity," the general said, indicating that "Army doctrine requires communications for real and near real-time exchange of information. We achieve this by dedicated, diversified and redundant systems. Significant among these, especially for use over long distances, are satellite communications."

Gen. Graves went on to say that "the high-tech edge we gain from space has worked so well that we're eager to expand that edge and are, therefore, interested in exploring developing technologies." He noted, in particular, the strategic defense initiative (SDI) as a technology program with potential for the Army.

The SDI program is an effort to identify and develop sound technical options for decisions on whether the United States should proceed with development of an effective defense against ballistic missiles.

"Exploiting technologies for the purpose of ballistic missile defense (BMD) is not a new concept," Gen. Graves said. "With the Army in the lead, the BMD effort was initiated back in 1955 when Bell Laboratories was asked to develop a variant of the Nike-Hercules that could intercept incoming ballistic missiles above the atmosphere. . . . The result was the Nike-Zeus, which was successfully tested in the early 1960s," he said.

Bringing his listeners up to date on BMD efforts, Gen. Graves recounted the successful intercept of a Minuteman missile reentry vehicle over the Pacific Ocean in June 1984 by one of the Army's experimental missiles. Noting the Army's BMD research and development organization and experience, Gen. Graves said that service has a significant role to play in SDI.

In support of USSPACECOM, Gen. Graves said, "the Army is actively participating in the planning for activation of the new unified space command. We need this link between the national command authority and our space capabilities to ensure effective employment in time of crisis and to provide operational focus for technology. Space systems are most often built for many users because of the cost of launch, on-orbit control and the systems themselves. The unified space command will provide a balanced advocacy and a better forum to fully address operational requirements for such systems."

Test Flights with Natural Gas. The Army Test and Evaluation Command, Aberdeen Proving Ground, Md., has announced the start of helicopter test flights using liquified natural gas as fuel. The first of the flights, which are being conducted at the Ft. Rucker, Ala., Aviation Test Center, lasted more than 30 minutes.

If the testing program proves successful, the conversion of Ft. Rucker's fleet of 129 gasoline-engined TH-55A training helicopters to liquified natural gas fuel could result in savings in excess of $994,000 annually in fuel costs alone, according to a spokesman for the program.

The program got its start in February 1982, when Beech Aircraft Corp. submitted an unsolicited proposal to the Army suggesting it evaluate the feasibility of using liquified natural gas as an alternative fuel for the TH-55A helicopter training program.

"Beech had already converted a Sundowner aircraft it manufactures, which used the same basic Lycomming [recipro-

cating] engine as the TH-55A, and had successfully proved the concept," noted a program official. During the first phase of the testing, the gasoline-powered Lycomming engine was mounted on a ground test stand for conversion. "The major change involved converting the engine's liquid fuel injection system to a carburetor system," he noted. "Unlike aviation gasoline, the natural gas changes from liquid to a gaseous form before reaching the engine's combustion chamber."

Through the use of the ground test stand, the evaluators established that the Lycomming engine, once converted, "would operate well on liquified natural gas." The only difficulty in using natural gas in liquid form is that it must be kept at minus-260 degrees Fahrenheit. Above that temperature it reconverts to gas.

A special insulated Dewar vessel, which officials describe as a "kind of giant thermos bottle," was installed on the aircraft to keep the gas cold. Personnel handling refueling operations for converted aircraft will have to wear special face shields and insulated gloves.

Liquified natural gas is about 95 percent methane, three percent ethane, one percent nitrogen and one percent other hydrocarbons. The primary attraction of using natural gas is the price: a gallon of liquified natural gas costs about 42 cents, while aviation gasoline costs $1.60 or more a gallon. In addition to the cost factor, officials at the Ft. Rucker test center cite a number of other advantages to using liquified natural gas. It burns cleanly, with little or no carbon buildup on engine parts, according to the tests conducted at Ft. Rucker. Liquified natural gas is also nontoxic, lighter than air and, when stored as a fluid, has no combustible vapor in the storage tank.

GENERAL OFFICER CHANGES



Lt. Gen. L.C. Menetrey from CG, CFA, ROK/US, to CG, Fifth USA.



Lt. Gen. J.E. Moore from CG, 7th Inf. Div., to CG, CFA, ROK/US.

Brigadier Generals: **T.P. Carney** from Ex-VCS, OCS, to DCG, West, USAREC; **C.E. Dominy** from ExSA, OSA, to CG, USAED-MR; **T.H. Harvey** from CWPD, SPPD, ODCSOPS, to ADC, 3rd Inf. Div.; **J.W. Hunt** from DCGI, INSCOM, to DCSI, FORSCOM; **Rudolph Ostovich III** from Cdr, 11th Av Gp, to ACmdt, USAAVNS; **T.D. Reese** from DCG-R&D, MICOM, to ADivC, 5th Inf. Div. (Mech); **G.J. Walker** from AComdt, USAICS, to DCGI, INSCOM; **D.R. Williamson** from PM-CAH, AVSCOM, to DCSR, AMC.

■ ***CFA**—Combined Field Army; **USAED-MR**—U.S. Army Engineer Division-Missouri River; **CWPD, SPPD**—Chief, War Plans Division, Strategy, Plans and Policy Directorate; **USAAVNS**—U.S. Army Aviation School; **MICOM**—Army Missile Command; **USAICS**—U.S. Army Intelligence Center and School; **PM-CAH**—Project Manager, Cobra Attack Helicopter; **DCSR, AMC**—Deputy Chief of Staff for Readiness, Army Materiel Command.*

Another advantage to using liquified natural gas as a fuel is its octane level. Aviation gasoline has an octane rating of about 100 while liquified natural gas has a rating of 130. This means there would be far less engine "knock" with the new system. A distinct advantage is the difference in weight: a gallon of aviation gasoline weighs about six pounds, but a gallon of liquified natural gas weighs only 3.5 pounds. Additionally, when one cubic foot of liquified natural gas con verts to gas, 600 cubic feet of natural ga are provided. The TH-55A helicopter being tested are equipped with 60-poun fuel tanks holding 23 gallons of liquifie natural gas. Ground tests indicate tha pilots can expect to fly for at least 1. hours with this amount of fuel. It is hope that adding a second tank will extend th converted TH-55A's flying time to abou three hours.



A TH-55A training helicopter converted to use liquified natural gas as a fuel hovers just off the runway at Cairns Army Airfield, Ft. Rucker, Ala., where the craft is being tested with an eye to reducing primary training costs. The white cylinder is a Dewar vessel used to keep the fuel supply cold and in a liquid state.

Los Angeles Cemetery Reopens. Lo Angeles National Cemetery reopened fo the burial of casketed remains late las year, for the first time since 1976, thank to an internal Veterans Administratio (VA) land transfer.

Los Angeles County has the larges veteran population of any county in th United States and the cemetery in Wes Los Angeles ran out of room for trad tional gravesites in 1976.

The 20-acre parcel of land transferre from the VA's nearby Wadsworth Mec ical Center is located across Sepulvad Blvd. from the cemetery, which is nea the intersection of Wilshire Blvd. and th San Diego Freeway. The additional lan will accommodate about 20,000 grave sites and, at an estimated rate of 250 in terments a month, should keep the ceme tery open into the early 1990s. Los Ange les has one of the three national ceme teries in southern California, the other being at Riverside and San Diego.

The VA has also announced a $1. million grant to the state of New Jerse to help establish a state-owned veteran cemetery in Arneytown, near Trentor The cemetery is expected to open th fall, with space for about 18,000 grave sites. The award was made under a 50 50 matching fund program which bega in 1980 to provide federal help for the es tablishment, expansion and improvemer of state veterans' cemeteries. More tha $6 million has been paid out under th program, the other recipient states bein Arizona, Connecticut, Illinois, Maine Maryland, Rhode Island and Wyoming

Awards Study Near Completion. Th Department of the Army is expected to an nounce this spring the results of a length study of the Army awards program, ac cording to a spokesman at the militar awards branch, Military Personnel Cen ter (MILPERCEN). The study, which being conducted by the Army Concep Analysis Agency (ACAA), seeks to "de termine perceptions of the present mil tary awards program in the field."

Thousands of soldiers of all ranks fro the active Army, Reserve and Nationa Guard have been completing question naires for the study. The questions pose address such issues as the distribution o awards between officers and enlisted so

diers, the number of awards being given in units, standards for awards, the importance of awards to a soldier's career and the consistency of the awards program in units.

Conclusions of an early draft version, released in December 1984, indicate changes in the awards program may be in order, although the draft came with a disclaimer warning that it was not to be interpreted as an official DA position, policy or decision. The early study results, covering the active Army portion of those surveyed, revealed a desire on the part of the soldiers to have the standards for awards applied more evenly, but not necessarily to receive more awards. There is also a general perception that the standards for earning the awards are high.

The major complaint revealed in the initial draft dealt with the enforcement of the existing ban against local commanders supplementing Army Regulation 672-5-1, the Army's awards and decorations regulation. The ban went into effect following the most recent evaluation of the awards program in 1977.

The current draft report noted that, while such local practices are taboo, a number of respondents to the survey expressed the belief that local standards are still being set by local commanders.

A majority (74 percent) of those who answered the questionnaire said they felt the number of awards given had increased during the past five years. That perception is accurate, according to the draft survey, which noted the number of awards given since 1976 has risen steadily.

Although this study indicated a general satisfaction among soldiers with the number of awards being granted, most respondents felt the standards for receipt of the awards are high or very high. Eighty-four percent of those who answered agreed with that estimate, while the remainder felt standards were low or very low.

Giant Crane Barges Renovated. The Army's Belvoir Research and Development (R&D) Center, Ft. Belvoir, Va., is renovating four 100-ton floating crane barges as part of an extensive improvement program being conducted by its Logistics Support Laboratory.

The first of these huge barges was built in 1944, and it proved so useful that eight more like it were built and deployed worldwide. Over time, however, replacement parts could not be found while conners that needed to be moved got bigger and heavier, and the crane barges became obsolete.

With replacement cranes still years away in the development stage, not to mention their potential cost, the Belvoir R&D center came up with a product-improvement proposal to save the endangered ants. Now three barges harbored in the

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One of the giant 100-ton floating crane barges recently renovated by the Army under a product-improvement plan managed by the Belvoir Research and Development Center, Ft. Belvoir, Va.

nited States and one in the United King-om have been given new life. Two more arges in the United Kingdom should be odernized during the current fiscal year, nd one in Okinawa and two in Korea y fiscal 1986.

The barges occupy nearly half a foot-all field of space, with crane booms aching 123 feet skyward, and enough om for its crew to live, eat and sleep. ompletion of this improvement program ill extend the service life of these cranes r at least 12 years.

obras to Have FLIR Device. The Ar-y has announced it will retrofit about lf of its fleet of Cobra attack helicop-s with forward-looking infrared (FLIR) vices as part of its effort to keep the titank craft combat effective through e 1990s. The Army Aviation Systems ommand awarded the contract for the vices to Hughes Aircraft Co., with de-eries scheduled to begin in 1986.

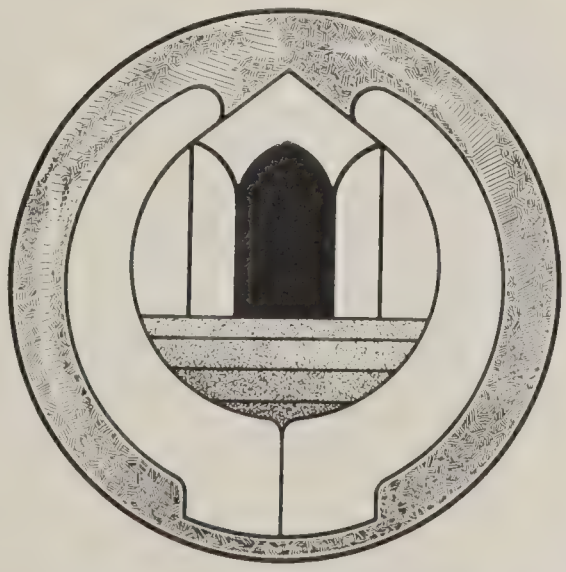
The device, which makes it possible for nners to see through darkness, smoke haze, will be installed in the telescopic ht for the Cobra's airborne TOW anti-nk missile system. In addition to firing missile, the sight is used to accurately ect cannon and rocket fire.

The FLIR contract also calls for modi-ations to enable the Cobras to fire and de the new TOW 2 antitank missile, y or night. TOW 2 features a more ent warhead, designed to defeat ad-nced enemy armor, and an improved dance system.

New Chapel Specialist Insignia. Army Chief of Staff Gen. John A. Wickham Jr. has approved new brass insignia for wear by soldiers in military occupational specialty 71M, chaplain's assistant. Chaplains, who are commissioned officers, wear either a cross or a tablet insignia on their uniforms, but enlisted chapel assistants were not authorized similar distinctive insignia and have been wearing Adjutant General brass.

The new insignia consists of two stylized hands enclosing a chapel. The hands represent religious support provided to the chapel and to religious programs, while the chapel's open door symbolizes a welcome to all worshipers. Approval of the new insignia follows a two-year study by the Office of the Chief of Chaplains, in which more than 135 designs submitted from various major commands were considered by the Army's Institute of Heraldry.

The new brass insignia are expected to go on sale in post exchanges within six months and should be in the supply system a year after that. They are authorized for wear as soon as they become available. Some 3,700 active Army and reserve components soldiers will be affected by the change.



Drawing of the new brass insignia for enlisted chaplain's assistants. It will be available within six months.

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TOW missiles are being modified to have an even greater armor-piercing capability. The Improved TOW, or ITOW, carries a five-inch diameter warhead incorporating advanced technology. The improved wire-guided missile has approximately the same weight and size as the basic TOW, but includes a probe on the nose of the missile for standoff detonation. The ITOW warhead can be retrofited on all basic missiles and requires no changes in the launcher or guidance hardware. Hughes Aircraft Company builds missiles in the TOW family for the U.S. Army and Marine Corps and over 30 nations.

Hovering helicopters and fast low-flying aircraft can be detected quickly and precisely by a mobile battlefield radar. The Low Altitude Surveillance Radar (LASR) is an advanced radar designed to help protect front-line troops and armor. It radiates pencil-thin beams from an electronic-scanning, rotating antenna to provide 360-degree coverage. LASR detects threats the moment they pop up on the horizon, filtering out clutter caused by terrain or electronic countermeasures. Hughes LASR systems are being built for use with Norwegian Hawk antiaircraft missiles.

A MIDAS touch will create the factory of the future by introducing computer technology throughout one Hughes manufacturing division. The new Manufacturing Information Distribution and Acquisition System (MIDAS) is a flexible, high-speed data communication network. It will transmit and gather millions of bits of data per day by linking computer terminals, laser printers, bar-code scanners, and other equipment. MIDAS will serve graphic workstations and facilitate paperless planning. Similarly, it will relay numerical-control programs from main computers to machines in the factory, eliminating the need for paper tape. MIDAS will let all users share important peripherals, such as a laser printer, which now is impossible due to the incompatibility of equipment from different manufacturers.

Complex microelectronic hybrid circuits will be made in huge quantities in a new missile manufacturing facility at Hughes in Tucson, Arizona. The building covers 71,000 square feet and houses glassed-in production areas. These rooms are so clean that each cubic foot of air contains no more than 100,000 particles 5 microns or larger. (About twice that many particles would fit inside this letter o.) Production equipment is interconnected to a host computer that controls the movement of all work, gathers quality data, and feeds operating instructions to machines. Operators plug into electrical, vacuum, water, and liquid nitrogen systems directly from their work stations. The production rate capability will grow from 800 hybrids a month in the old facility to 40,000 a month by 1987.

A new target cueing system makes shoulder-fired missiles more effective, allowing troops to fire at aircraft day or night or in bad weather. The prototype uses the Low Altitude Surveillance Radar (LASR), a recent Hughes development, and the Position Location Reporting System (PLRS), in production for the U.S. Army and Marine Corps. It enables a gunner to use the full capabilities of the missile and assists him in making the split-second decisions needed to engage fast, low-flying aircraft. LASR pinpoints incoming targets while PLRS provides the precise location of both the radar and the weapon. Small lights integrated into the missile launcher sight direct the gunner and tell him when the target is within launch range. Tests show that gunners can learn to operate the cueing portion of the system with only 20 seconds of practice.

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Tribute to Soldiers Who Fought

A World War II Story Retold from New Perspective

A Time for Trumpets: The Untold Story of the Battle of the Bulge. *Charles B. MacDonald. William Morrow & Co., Inc., 105 Madison Ave., New York, N.Y. 10016. 712 pages; photographs; charts; notes; bibliography; $19.95.*

By Gen. William E. DePuy
U.S. Army, retired



M4 Sherman tanks of the 7th Armored Division's 40th Tank Battalion deployed to fire on German positions near St.-Vith, Belgium, during the Allied effort to erase the 'Bulge,' January 1945; by this time, the crisis of the epic battle had passed.

Books

A master historian, marvelous story-teller and participant, Charles B. MacDonald, has written a story of an epic battle from the unusual perspective of the soldiers who fought it. The author says it is the untold story of the Battle of the Bulge, and he is right. His book will be cherished by the men who did the fighting, celebrated by enlightened historians and studied by professional soldiers.

The men who fought and survived that bitter campaign will appreciate this book because the author tells their story—the story they wanted to tell but could not. Each of them saw just a tiny fraction of that rending collision between two enormous armies.

Like all huge battles, this one involved thousands of engagements between small groups of men contesting for dark wood lines, tiny villages and temporarily important crossroads.

For these soldiers, on both sides, Mr. MacDonald has added deeper meaning to their personal experiences; meaning beyond the bitter cold, numbing fear and desperate comradeship.

For this purpose, the author has sketched the top-down context. For those soldiers, he has put the pieces together. But, overwhelmingly, his is a tribute to the dry soldiers he takes the time to describe. Never mind that Army groups, armies, corps and divisions were working their way competently through a whole new operational experience. The author's message is that individuals made a difference. Some rose to the occasion while others faltered or failed, but an astounding majority did what was necessary. Courageous men appeared, did their duty, sometimes survived, often did not.

The author names and describes many such men and their actions. Notwithstanding his heroic effort to give credit where credit is due, there were many more of equal merit known only to God and their buddies. For these, too, this splendid book was written.

A Time for Trumpets is also a much-needed historical corrective. Understandably, the circumstances of that campaign elevated a few units and their dramatic battles to prominence and thereby assigned obscurity to most of the others. Mr. MacDonald raises the visibility of scores of other actions of comparable importance without diminishing the luster of the battles at Bastogne and St.-Vith, Belgium, and the Third Army's agile and aggressive move against the south flank of the German salient.

Now, instead of three great peaks rising from the plain below, Mr. MacDonald has described a towering massif—a cluster of peaks rising from a high plateau of exemplary performance, courage and sacrifice by the vast majority of units and individuals involved.

Although the Battle of the Bulge extended from 16 December to 28 January, when the entire salient was finally erased (a period of 43 days), this book is largely confined to the first 11 days. It would have been impossible to continue the depth and intensity of his treatment much longer in a single book. Out of 623 pages, the first four days of battle consume over half. By Page 584, he reaches the end of the 11th day of battle. Of course, much bitter fighting took place over the last 32 days. Half the 80,000 American casualties occurred after 3 January.

How then can this book be called an historical account of the Battle of the Bulge? The answer is that, strictly speaking, it cannot. But the author is right in his appraisal that by the day after Christmas, 1944, the 11th day of battle, the German attack was broken. The issue was no longer in doubt. The crisis was over.

Adolf Hitler was not prepared to accept failure or admit to his forces that his gamble had failed. His brave soldiers fought on in the great tradition of the German Army and both suffered and inflicted grievous additional losses.

Hitler had a grand, if unrealistic, goal. He wanted his newly reconstituted *panzer* armies to slice through the Ardennes, as they had in 1940, and instead of heading for the channel coast at Dunkerque, France, to turn more abruptly north to Liège and on to Antwerp, Belgium.

This would isolate, and pin against the North Sea, four armies—over half the entire Allied force. His generals thought his plan was too ambitious, given the forces available, but thought they might reach Liège and destroy the U.S. force south of the Meuse River.

Although one of the two *panzer* armies did break through in the southern zone and nearly reached the Meuse at Dinant, Belgium, the Sixth *SS Panzer Armee* on the north was stymied from the outset by the unexpectedly stiff resistance it met in the vicinity of Elsenborn,

Belgium, and to the north. Moreover, every effort by the German force to turn toward Liège was blocked by the successive and successful extension of the First U.S. Army front to the west.

The margin of affordable error during this first week and a half was near zero. The issue was continuously in doubt.

The gallant defense by the divisions on the frontier (4th, 28th, 106th, 99th and 2nd Infantry divisions and the 9th Armored Division) plus corps and Army combat engineers bought some precious reaction time for the badly surprised American high command. The description of these battles forms the strong introduction to Mr. MacDonald's account. That reaction time was well spent.

After the initial shock on 16 December, the command responded quickly. Four reinforcing divisions (7th and 10th Armored divisions, and 1st and 30th Infantry divisions) were on the move by 17 December, and the two airborne divisions (82nd and 101st) were on the way the next day.

Each of these divisions arrived just in the nick of time, and the gripping story of the battles along the frontier on the northern flank and around Bastogne form the spine of Charles MacDonald's detailed account.

By the 11th day of battle:

- The northern shoulder at Elsenborn had been stabilized after bitter fighting by the 2nd, 1st and 99th divisions. If one looks for a center piece, this is it.
- Sixth *SS Panzer Armee* was never able to get its attack rolling to the northwest. *SS* Lt. Col. Joachim Peiper's *kampfgruppe* had been destroyed.
- Bastogne had been defended by the 101st Airborne and elements of 9th and 10th Armored divisions. The road from the south had been opened by the attack of 4th Armored Division of Third Army.
- First Army had extended a strong defense westward from Elsenborn by the successive deployment of a veteran and formidable force consisting of 30th Infantry, 82nd Airborne, 3rd Armored, 84th Infantry and 2nd Armored divisions grouped under XVIII Airborne and VII corps.
- The last effort by the Germans to break through to the Meuse River and Liège had been defeated by the offensive action of 2nd Armored Division of VII Corps at Celles, Belgium.
- With the 26th Infantry, 80th Infantry, 10th Armored (-) and 5th Infantry divisions, Third Army had driven the southern blocking force (7th German Army) as far north as the Sure River east of Bastogne.
- German commanders on the ground knew that the attack had failed and went over to the defense.

"The Road Back"—the collapse of the salient, the hard fighting involved, the commitment of nine more American divisions—is included by the author for completeness, but his heart is not in it and his method will not permit it. He has told the story he set out to tell.

Professional soldiers will study this book long and hard. It describes in clinical detail what happened when the U.S. Army was struck without warning by a massive armored attack—a one-time experience in its long history.

Mr. MacDonald's book arrives when U.S. Army doctrine for such a contingency is in healthy ferment. The timing could not have been more opportune.

The similarities between the situation facing NATO commanders today and those that faced VIII Corps, First Army and 12th Army Group in 1944 are extensive. The Fifth *Panzer Armee* with five divisions attacked two U.S. divisions deployed on a 40-mile front. Today, U.S. V Corps in Germany covers a 50-mile front with two divisions and is opposed by a Soviet army of five divisions. *Kampfgruppe* Peiper was the forerunner of the much-discussed Soviet operations maneuver groups.

It might be more than interesting to bounce emerging Army tactical and operational concepts against the scenario which unfolded 40 years ago and has just now come alive thanks to Mr. MacDonald's pen.

GEN. WILLIAM E. DePUY, U.S. Army, retired, the former commander of U.S. Army Training and Doctrine Command, served in Europe in World War II and commanded the 1st Infantry Division in Vietnam. Also a former deputy commander of the old Continental Army Command, he has served in the Office of the Joint Chiefs of Staff, as assistant vice-chief of the Army General Staff with the CIA and as a military attaché.

As a service to readers interested in obtaining books reviewed in *ARMY*, the mailing address of the publisher is included in the head notes for each main review and Varied Fare item. Readers are reminded that neither *ARMY* nor AUSA has the facilities to order books for them or to handle the related correspondence; inquiries and orders must be directed to the publisher.

The Editors

Saber-Rattling as a Power Tool

Military Threats: A Systematic Historical Analysis of the Determinants of Success. *Peter Karsten, Peter D. Howell and Artis Francis Allen. Greenwood Press, 88 Post Road West, Box 5007, Westport, Conn. 06881. 166 pages; notes; tables; bibliography; index; $29.95.*

By Col. Stanley L. Falk
U.S. Army Reserve, retired

In the rough game of international politics, the threat to use military force is a frequent gambit. Whether it is real, a bluff or out of desperation, a military threat can be an effective means of coercion short of war or simply an excuse to start a war already intended.

Military threats take many forms: direct or implied, general or specific, long-range or immediate, compellent or deterrent. The decision to issue a threat rests alike on multiple considerations, the most obvious of which is the simple balance between risks and potential gains. Is the objective to be attained worth either the cost of war or the potential loss of status if a bluff is called successfully?

There is ample literature on the use and role of threats, most of which is theoretical in nature. Professors Karsten, Howell and Allen, however, try a different approach. Shifting to a behavioral analysis, they have undertaken a comprehensive statistical study of 77 historical cases—and tested their findings against others—in order to establish the specific determinants of success or failure.

The authors describe the general characteristics of military threats, identify successful and unsuccessful types, and relate what types of threats have actually led to war. To this end, they attempt to classify the circumstances, interests, decisive players and other variables affecting success or failure.

They also compare the nature and results of threats made in the nuclear age with those of the preatomic past, and of threats made by the United States as opposed to those issued by other major powers. Finally, they investigate the long-term consequences of military threats.

This is a tall order, one the authors approach energetically and systematically. While their conclusions do not always emerge as precisely as one might wish, their analysis and findings are both stimulating and useful. Proceeding from such generally accepted assumptions as the premise that threats must be credible to be successful and that no threatener can assume rational behavior on the part of his target, Dr. Karsten and his colleagues reach several conclusions.

Threats, they suggest, are of little value except when the country making them has relative strength and its target is conditioned to yield. The threatener must

ave limited objectives and the support f its allies and of world opinion. The arget must also have limited goals and ack the resolution to oppose the threat. Generally, all of these conditions must be net if the threat is to succeed.

Other important variables influencing ne outcome are the number of deeply elt national interests in the area of contention, the perceived effect on the balnce of power, the unanimity of decisionnakers within each contending state and ne amount of "face-saving" allowed the rget.

The authors point out that the develop-ent of nuclear weapons has not changed ie basic determinants of success or fail-e nor have American threats differed gnificantly in characteristics or outcomes om those of other powers. They con-ude that the result of a given threat is reliable predictor of the future effec-veness of similar threats.

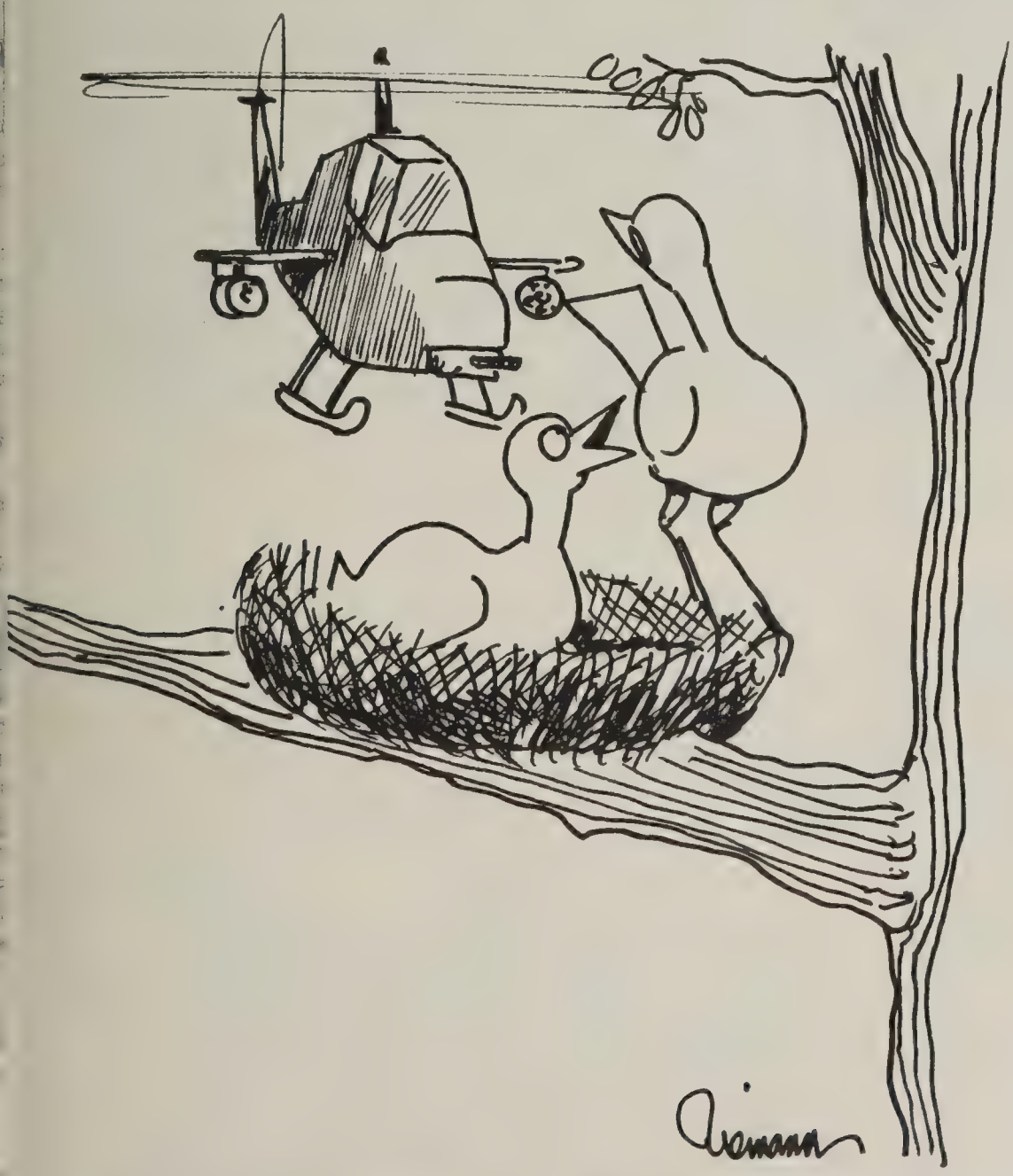
An interesting finding of this perceptve analysis is that shows of force accompanying threats have had no statistilly significant impact. Appearances to e contrary, military deployments have t contributed substantially to threat ccess or failure. Of more importance is



the perceived overall capability of the threatener to carry out his stated intentions.

While all of these generalizations may be subject to the usual exceptions, they are soundly based on historical research and statistical analysis and are persuasive. The book requires careful reading, but the time will be well spent.

COL. STANLEY L. FALK, U.S. Army Reserve, retired, Ph.D., was formerly deputy chief historian for Southeast Asia at the U.S. Army Center of Military History and is the author of five books on World War II.



"Boy, if this bird is coming home to roost, we've got trouble."

'Invisible, Ignored'

Presenting the Case For Women Veterans

Women Veterans: America's Forgotten Heroines. *June A. Willenz. The Continuum Publishing Co., 370 Lexington Ave., New York, N.Y. 10017. 252 pages; notes; reading list; index; $19.50.*

By Col. Rose Stauber
U.S. Army, retired

The author's thesis is that America's 1.2 million women veterans have been invisible and largely ignored in the dispensation of veteran benefits, but that their growing numbers and greater awareness now demand greater attention, primarily from the Veterans Administration (VA).

The book introduces women veterans with a 28-page history of U.S. military women from the Revolution to the present and through a series of profiles.

World War II-era profiles focus on women who treasure their wartime experiences. Although they entered the service often after being well established in careers, military service increased their responsibilities and widened their horizons. Selections for these profiles may not be of typical veterans: the first is of Sarah McClendon.

Profiles of women veterans after World War II concentrate on the 1960s and 1970s, more on enlisted women than officers, and on women who, for various reasons, found the service less satisfying than did women in the World War II profiles. However, these women, like the World War II veterans, found in the military an opportunity to gain experience, training and confidence. The unsatisfactory aspect of the profiles is the lack of direct quotes.

The book's substance is a discussion of veterans' benefits, which appears in later chapters. June Willenz reviews at length the special cases of the Women's Auxiliary Army Corps and War Air Service Program, situations corrected much too late by legislation. She also describes the long overdue recognition given nurses

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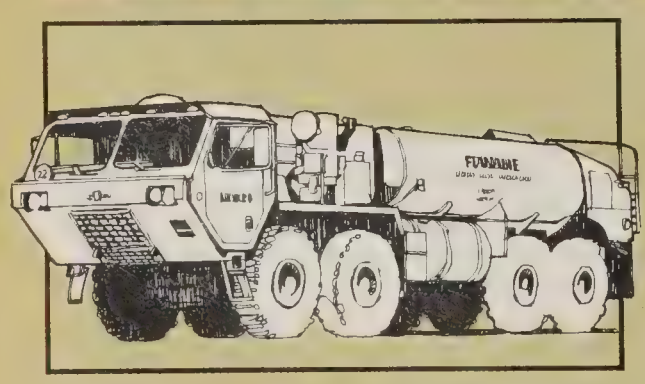


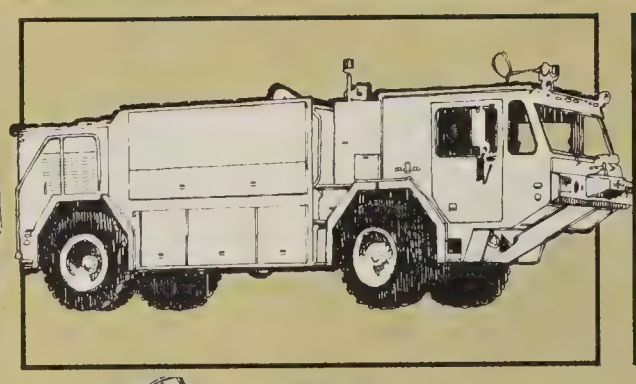
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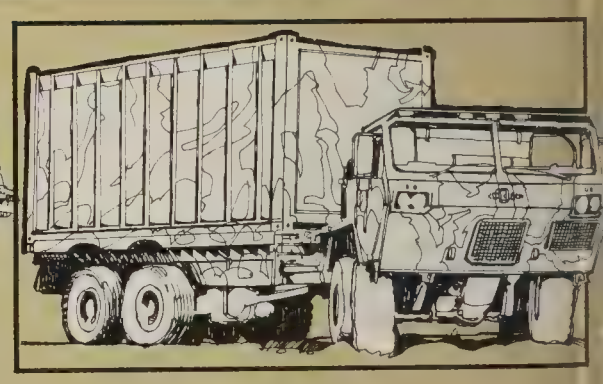
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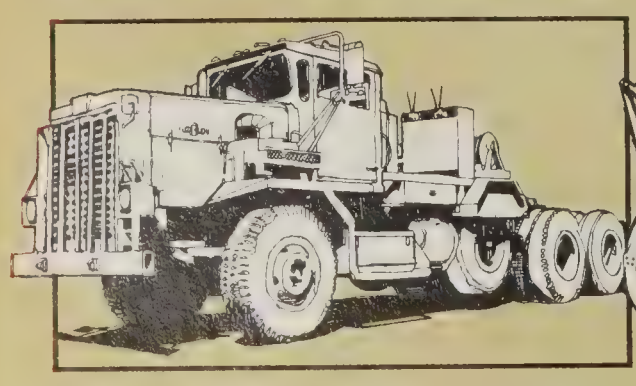
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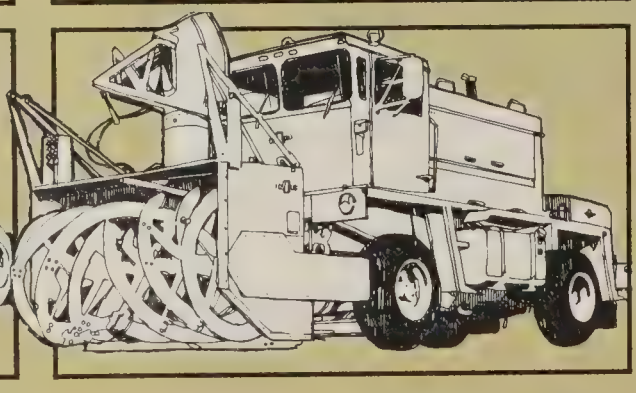


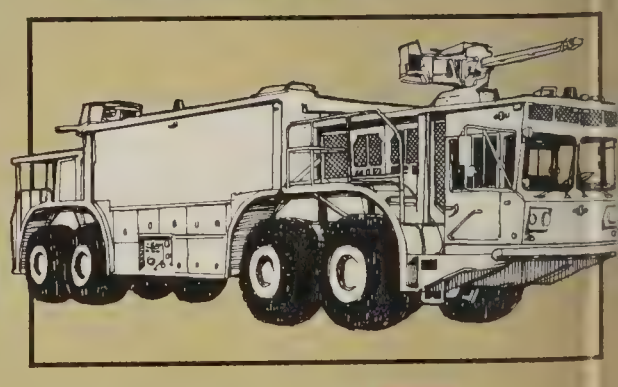












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vho survived Bataan, Corregidor and apanese imprisonment.

Also emphasized is the lack of data ept on women veterans by agencies con- erned with them because statistics were ot recorded by gender. Historically, omen made up less than two percent of ll veterans. The increasing number of ilitary women since the early 1970s has rought the figure up to 3.8 percent.

This influx of young women veterans lowering the average age of their group



hile the VA is gearing up to handle the eds of an aging male veteran popula- on caused by the number of World War veterans now reaching age 65.

While statistics on women's use of ben- its such as the GI Bill, home loans and edical care are unknown, the author lies primarily on two sources to estab- h problems in VA medical care: a 1982 overnment Accounting Office (GAO) port and congressional hearings on VA re for women.

Both sources indicated two primary ssatisfactions with women's care in VA cilities—lack of gynecological care and k of facilities to provide women pri- cy. The court fight that has upheld the A in denying obstetrical care to women terans is also reported.

The last chapter concentrates on ef- ts by the American Veterans Commit- , of which June Willenz is executive ector, and by others to enact legisla- n which established a VA advisory mmittee on women veterans. The com- ttee was established in August 1983, th the author as a member of the ex- utive board.

This book is neither well written nor rticularly useful. It is frequently repeti- us, sometimes irrelevant and indiffer- ly edited.

Those seriously interested in the sub- t will profit best by obtaining copies the GAO report and the congressional trings.

The author has accomplished one thing, wever: she notes the lack of any refer- e in the Library of Congress index to ier "veterans, women" or "women, vet- ns." There are such references now.

L. ROSE STAUBER, U.S. Army, re- ired, served as a public affairs officer nd as editor of Stars & Stripes, *Euro- ean edition, and* Military Review.

Varied Fare

Soviet Tanks and Combat Vehicles of World War Two. *Steven J. Zaloga and James Grandsen. Stackpole Books, P.O. Box 1831, Dept. L. Harrisburg, Pa. 17105. 240 pages; illustrations; photographs; tables; bibliography; index; $19.95.*

The authors have written an authoritative and well-illustrated study of Soviet tanks and armored vehicles, focusing primarily on their technical evolution.

Iraq: Eastern Flank of the Arab World. *Christine Moss Helms. The Brookings Institution, 1775 Massachusetts Ave., N.W., Washington, D.C. 20036. 215 pages; notes; index; cloth $28.95, paper $9.95.*

An examination of the cultural history, recent political developments and geographic configurations that are the fundamental determinants of Iraqi politics with respect to the war against Iran and probable relations with its neighbors, including the West.

The Home Front and War in the Twentieth Century: The American Experience in Comparative Perspective. *James Titus, ed. U.S. Air Force Academy and Office of Air Force History. Distributed by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. 287 pages; index; $9.*

The proceedings of the Tenth Military History Symposium held at the Air Force Academy in October 1982, this collection of papers offers the cogent observations of respected and well-known military historians on the relationship between war and society, not only in the United States but also in Britain, France, Germany and Austria-Hungary—a wide-ranging commentary on public opinion, social attitudes and the civil-military interface in time of war.

The French Army and Politics, 1870-1970. *Alistair Horne. Peter Bedrick Books, 125 E. 23rd St., New York, N.Y. 10010. 109 pages; notes; index; $12.95.*

The author of the marvelous trilogy on the Franco-German conflicts in 1870, 1914 and 1940 has here, in what were originally four Lees Knowles lectures in military science at Trinity College, Cambridge University, in 1982, examined the changing civil-military relationship in France over the last hundred years. In this scholarly work he sheds much light on why the French Army fought as it did in the past century and illuminates such matters as loyalty and legitimacy.

Vietnam: A History. *Stanley Karnow. Penguin Books, 40 W. 23rd St., New York, N.Y. 10010. 752 pages; illustrations; $10.95.*

This is the paperback edition of the companion volume to the public television series "Vietnam: A Television History," which aired in this country last year. It is consistently well written, interesting and at times insightful, but it is more a memoir than a history and, because it attempts to cover so much, it falls far short of its ambitious claim to be "the first complete account of the Vietnam war." Mr. Karnow is strongest when writing about political and diplomatic events, weakest when dealing with Vietnamese history and the American military involvement in Vietnam. The text has no footnotes and the "notes and sources" section in the back of the book is really only a bibliography that does little to document or support the text. Nevertheless, this is a handsome and inexpensive edition of a book that, despite its scholarly shortcomings, is fast on its way to becoming a basic text in the growing literature of Vietnam war analyses.

On the Brink: Defense, Deficits, and Welfare Spending. *James L. Clayton. Introduction by Peter G. Peterson. Remapo Press, 363 Seventh Ave., New York, N.Y. 10001. 153 pages; index; $8.95.*

A study of the growing fiscal problems and budgetary dilemmas facing the United States and how they affect American ability to provide for defense as well as welfare.

Churchill: Retreat from Empire. *Raymond A. Callahan. Scholarly Resources, 104 Greenhill Ave., Wilmington, Del. 19805. 293 pages; notes; index; $22.*

Raymond Callahan, a professor of history at the University of Delaware and a former holder of the Morrison Chair at the Command and General Staff College at Ft. Leavenworth, Kan., has written a marvelous, warm, sensitive and perceptive account of Winston Churchill's life during the years 1950–55, when he played the principal role "at the climactic moment in British history when victory in war led to the death of an empire" and Britain's world position disintegrated. Thoroughly researched, beautifully written, this work is the clearest and most balanced view of the complex and controversial Winston Churchill, who has assumed a quasi-mythic status as the greatest war leader of all time.

The Right Hand of Power. *U. Alexis Johnson with Jef Olivarius McAllister. Prentice-Hall Inc., Englewood Cliffs, N.J. 07632. 642 pages; illustrations; index; $24.95.*

A personal memoir, beautifully written, by a distinguished career diplomat whose involvement in and observations of post-World War II critical events—the Cuban missile crisis, the 1954 Geneva Conference, the Tonkin Gulf incident, the SALT negotiations, among others—provide insight into the workings of diplomacy, the personalities of political and military leaders, and, in general, the relationship between diplomacy and military force.

Air Superiority in World War II and Korea (USAF Warrior Studies). *Richard H. Kohn and Joseph P. Harahan, eds. Office of Air Force History, U.S. Air Force, Washington, D.C. Distributed by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. 116 pages; photographs; maps; appendix; bibliography; index; no price given.*

Part of a series of historical studies in support of Project Warrior, which "seeks to create and maintain within the Air Force an environment where Air Force people . . . can learn from the past," this volume is an interview with Gens. James Ferguson, Robert M. Lee, William Momyer and Lt. Gen. Elwood R. Quesada.

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larietta, Georgia—
anuary 1985

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th the Military Airlift Command.
The fixed-price program calls for
ckheed-Georgia to produce 50
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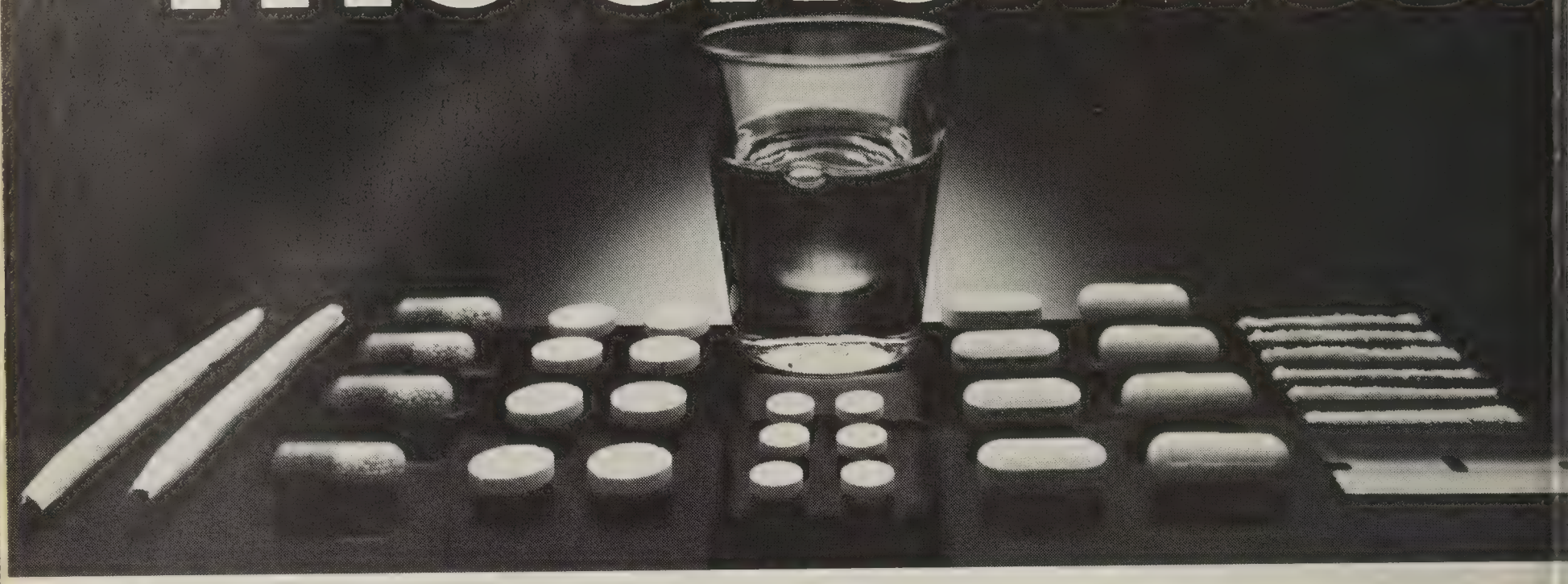
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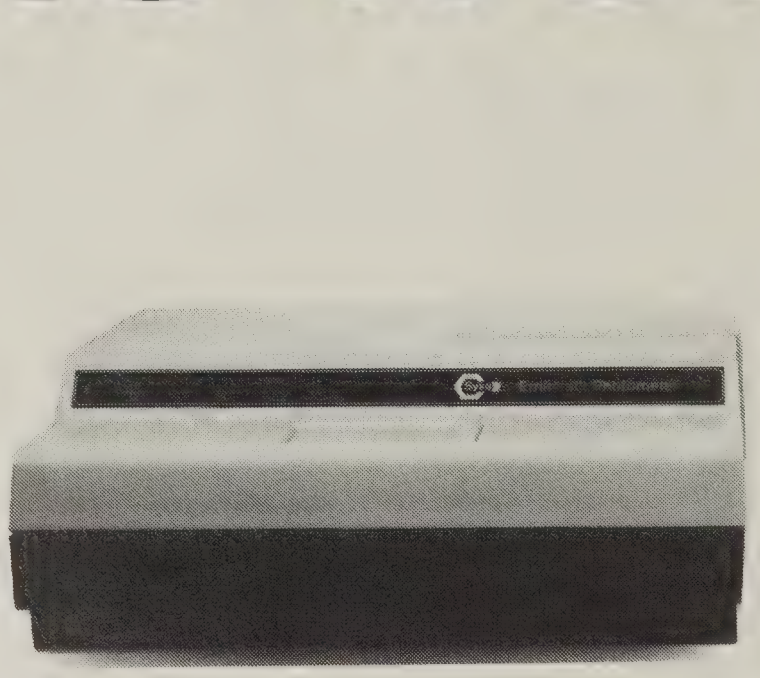
It is also a testimonial to the skill and energy of the people at Lockheed-Georgia, as well as workers at Lockheed's suppliers in 47 states.

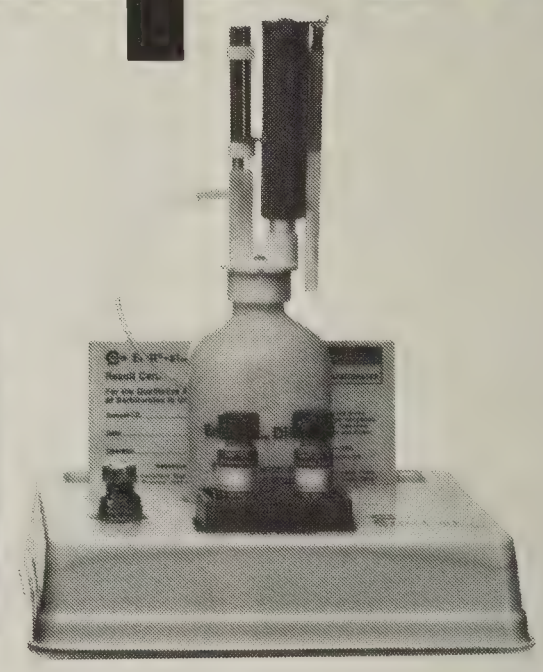
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AUSA in Action

Need for Strong Defense Focus Of Speech to Sunshine Chapter

Lt. Gen. Charles P. Graham, commander of the Second U.S. Army at Ft. Gillem, Ga., told members of AUSA's Florida Sunshine Chapter that the Association must take an active role in convincing fellow Americans of the importance of a strong defense and a strong U.S. Army.

Speaking before an audience of chapter members and Reserve Officers' Training Corps cadets from Florida's Stetson University, Gen. Graham urged members to help focus the public's attention on the need for a strong defense: "We must convince the public that their continued freedom is dependent on the support we receive from Congress. People must realize that this is their Army."

He also called for improved relations between the Army and the news media: "We must work with the media so they understand the importance of the Army. We need to eliminate the adversarial relationship that we've had with some of them."

Contributing to that strained relationship is the widespread complacency of the media and the general public. That complacency can be attributed to the public's isolation from many of the world's problems, according to Gen. Graham.

"We take our freedom for granted and sometimes ignore the fact that we live in a dangerous world. There's no question that the Soviet Union would like to take away our freedom and replace it with a Marxist ideology," the general said.

Quoting from a recent column by *Orlando Sentinel* columnist Charley Reese, Gen. Graham said, "The responsibility for the independence of this country rests with the armed forces." And landpower is a critical element for preserving that independence, he added. "He who controls the land is the one who controls life and the future."

The new Army, said Gen. Graham, is an army of transition, adjusting to meet a wide spectrum of conflict, from terrorism to strategic engagements.

At the same time, the active Army is the smallest it has been since the Korean War. That means the Army must rely even more on National Guard and Reserve units, which now make up 40 percent of total combat forces.

"The United States could not fight a war without these reserve components or without the support of the people. The Army should never again be committed to war without the support of the people. It's not fair to the soldier and it's not fair to the people," Gen. Graham stated.

He also stressed the importance of the current effort to modernize U.S. forces: "The modernization isn't cheap, but it's essential."

In recent decades, the percentage of the U.S. budget allocated for defense has dropped sharply from 48 percent before the Vietnam war to 28 percent in 1984. The current budget represents only a four-percent increase in inflation-adjusted growth.

Gen. Graham urged members of the Orlando-based chapter to recruit new members from nondefense-related industries and companies that also have a vital interest in a strong defense.

"We must tell our story of the need for a strong Army and of the need for improvements to keep the U.S. military strong. We must convince the public that they should make their concerns known to those in Washington who control defense spending."



Sunshine Chapter. *David Halloran, chapter president, presents a certificate of appreciation to Lt. Gen. Charles P. Graham, Second U.S. Army commander, who spoke at a chapter general membership meeting.*

Principals Observe Classes

Educators Benefit from Prep School Tour

AUSA's Ft. Monmouth Chapter sponsored a tour of post schools for 25 members of the Monmouth County High School Principals Association. The educators visited the Chaplain School and the U.S. Military Academy Preparatory School so that they could observe the Army's educational methods in practice.

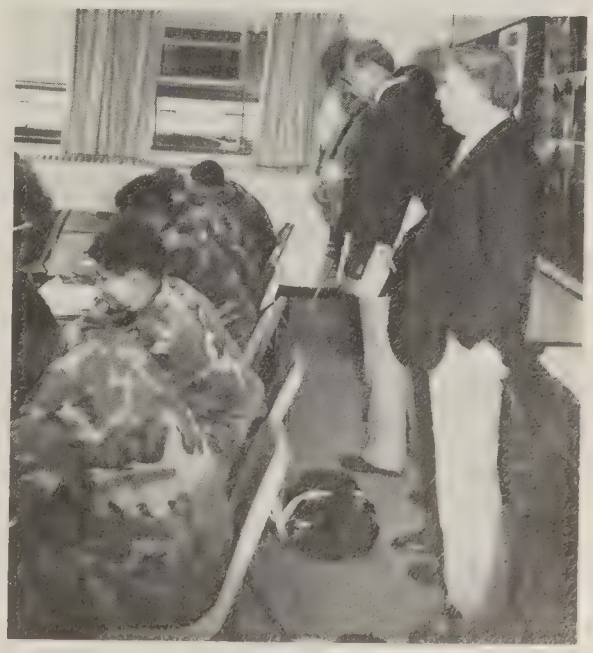
According to Jeff Osborn, president of the association and principal of Manasquan High School in New Jersey, the group participated in the tour in order to be better able to guide students interested in pursuing careers in the armed forces and those interested in attending the U.S. Military Academy at West Point.

After a tour of the Chaplain School's museum and facilities, the educators received a brief overview of the school's mission from Chaplain (Col.) Charles J. McDonnell, assistant commandant.

The next phase included a tour of the prep school's academic facilities, observation of classes in progress and an orientation on the academic goals of the school from Harold Beal, dean of academics.

The association's members also dined with cadet candidates to discuss the prep school's program in further detail.

"We were very impressed with the academic courses at the prep school," Mr. Osborn said. "Now each principal can go to his individual guidance department and provide information to our students regarding acceptance at West Point."

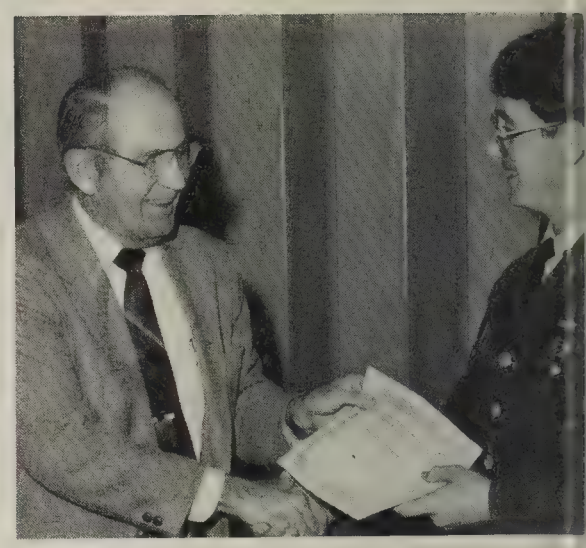


Ft. Monmouth Chapter. *Educators from the Monmouth County High School Principals Association observe a class at the U.S. Military Academy Preparatory School during a recent AUSA-hosted tour of post schools.*

Around the Chapters

Daniel Boone Chapter. *Maj. Gen. Frederic J. Brown* (right of podium), *commander, U.S. Army Armor School and Ft. Knox, Ky., assists Kentucky state senator Joe Prather* (left) *in a fund-raising auction sponsored by the chapter to benefit its soldier programs.*





Bogardus S. Cairns Chapter. *Sp.4 Robert E. Arritt* (right) *is presented an AUSA chapter certificate of achievement at Ft. Rucker, Ala. Making the presentation is Stanhope Elmore, second vice-president of the chapter. Sp.4 Arritt received the award for being chosen Ft. Rucker's soldier of the month.*



Dwight D. Eisenhower Chapter. *Al Bayer* (center), *chairman of the chapter board, and Lt. Col. James Jenkes* (right) *welcome Col. Robert Stewart, the Army's first astronaut, to a chapter dinner meeting. Col. Stewart was the evening's featured speaker.*



Hawaii Chapter. *John D. Bellinger* (right), *chairman of the board and chief executive officer, First Hawaiian Bank, receives the Gen. Creighton W. Abrams Medal from Gen. Fred C. Weyand, USA, Ret., in a re-presentation ceremony hosted by the Hawaii Chapter. The medal, originally presented to Mr. Bellinger at the AUSA Annual Meeting in Washington, D.C., is for outstanding contributions to and sustained support of the Army.*

★ STAR CHAPTERS ★

Chapters that reach their aggregate membership targets are classified as Star Chapters and will retain that status until they fail to reach any subsequent membership goal. Congratulations to the following chapters for having attained their semiannual membership targets during the first half of our operational year ending 31 December, 1984.

Ark–O–Tex (Texarkana, Tex.)
Bavarian Alpine (Munich, Ger.)
Bluegrass (Lexington, Ky.)
Blue Mountain (Harrisburg, Pa.)
Braxton Bragg (Ft. Bragg, N.C.)
Captain Shreve (Shreveport, La.)
Central Texas–Ft. Hood (Killeen)
Cincinnati (Ohio)
Connecticut (Norwalk)
Denver Centennial (Colo.)
Des Moines Freedom (Iowa)
Dix (Ft. Dix, N.J.)
Douglas MacArthur (Norfolk, Va.)
Fairfax–Lee (Ft. Belvoir, Va.)
Florida Gulf Stream (Miami)
Ft. Jackson–Palmetto State (Columbia, S.C.)
Fort Pitt (Pittsburgh, Pa.)
Fort Worth (Tex.)
Gallant Pelham (Ft. McClellan, Ala.)
GA Omar N. Bradley (Ft. Bliss, Tex.)
Gen. Joseph W. Stilwell (Ft. Ord, Calif.)
Gen. W. C. Westmoreland (Reno, Nev.)
George Washington (Washington, D.C.)
Greater Los Angeles (Calif.)
Hawaii (Honolulu)
Henry Leavenworth (Ft. Leavenworth, Kan.)
Indiana (Ft. Benjamin Harrison)
Korea (Seoul)
Leonidas Polk (Ft. Polk, La.)
Long Island (N.Y.)
Magnolia (Jackson, Miss.)
Maine (Saco)
MG William F. Dean (Oakland, Calif.)
MG Henry G. Sharpe (Lathrop, Calif.)
Massachusetts Bay (Boston)
Mid-America (Wichita, Kan.)
Mother Lode (Sacramento, Calif.)
New Orleans (La.)
New River Valley (Radford, Va.)
Norddeutschland (Bremerhaven, Ger.)
Pikes Peak (Ft. Carson, Colo.)
Polar Bear (Fairbanks, Alaska)
Robert E. Lee (Ft. Lee, Va.)
San Bernardino–High Desert (Barstow, Calif.)
San Jacinto (Houston, Tex.)
Southeastern Oklahoma (McLester)
Southern New Mexico (Las Cruces)
Spearhead (Frankfurt, Ger.)
Sunshine (Orlando, Fla.)
Tacoma–Ft. Lewis–Olympia (Wash.)
Texas Capital Area (Austin)
West Point Area (West Point, N.Y.)
Wright Brothers (Dayton, Ohio)

Chapter Notes

rktown Chapter. The chapter held a gen- l membership meeting to discuss mem- ship campaign results and plans for the ning year. Special guests were Lt. Gen. omas D. Ayers, deputy commander in ef, U.S. Army Europe, and Maj. Gen. hie S. Cannon Jr., deputy chief of staff personnel, U.S. Army Europe and Sev- h U.S. Army, and president, AUSA Eu- ean Department, who was the keynote aker. Gen. Cannon discussed the 1984 onal Annual Meeting, with special em- sis on the resolutions adopted. Gen. rs presented AUSA plaques to the peo- and units who won membership cam- gn awards. Door prizes donated by cor- ate members were also awarded.

puty Commander Meets Members

tuttgart Chapter Welcomes General

he corporate membership of the Stutt- Chapter hosted a reception in honor of Gen. Joe S. Owens, chapter president. Owens, a longtime AUSA member, is uty commanding general of VII Corps community commander of the greater tgart military community. The reception planned to provide an opportunity for orate members and chapter officers to t and get to know the general.

his brief welcoming remarks, Olaf Danne, dard *Elektrik Lorenz A.G.*, welcomed Gen. ns to the Baden–Württemberg area, not one of Germany's most significant in- rial regions but also one of its most at- ive. In his reply to Mr. Danne, Gen. ns expressed special appreciation to German and American firms who sup- the Army and its soldiers through their orate membership in AUSA.

also used the opportunity to present corporate membership certificates to companies that have recently joined the Stuttgart Chapter. These included: American Express Military Travel Service of Stuttgart, ASS Alarm–Schutz–System of Boeblingen, Hotel Koetzle of Stuttgart and U.S. Video Mart of Stuttgart.

The regional president of the German *Bundeswehr* Association in Baden–Württemberg, Capt. Dieter Herzing of the German Army, was among the guests. Also present were senior leaders of the military communities making up the Stuttgart Chapter area, including Goeppingen, Heilbronn, Schwaebisch Gmuend and Schwaebisch Hall.

Before closing remarks by Larry Miller, president of Cars International Inc., Col. David A. Beckner, USA, Ret., vice-president for corporate affairs, outlined plans for upcoming events involving chapter corporate members.



uttgart Chapter. *Newly installed chapter officers are,* left to right: *Maj. Richard L. gate, vice-president, programs; CSM Bobby S. Dalrymple, first vice-president; Maj. n. Joe S. Owens, president; Capt. Dieter Herzing, chapter guest; Lu Hays, treasurer; l. R. M. Robinson, secretary; and Col. Dave Beckner, USA, Ret., vice-president, cor- rate membership. Not shown are Lt. Col. William Mulvey, vice-president, public af- rs, and M.Sgt. Jack R. Boles, vice-president, membership.*

The chapter also sponsored a fashion show at the Zweibrücken Officer's and Civilian's Club. Fashions displayed were presented by two local clothing stores who are corporate members, *Sports Mode Franck* and *Sinn.* Additional corporate members have asked to participate in the next show scheduled for early spring.

Topeka Chapter. Noteworthy speakers highlighted two separate chapter meetings: Maj. Gen. Dave R. Palmer, deputy commandant, Command and General Staff College, Ft. Leavenworth, Kan., discussed the Army school system and the college at one meeting. Maj Gen. Ronald L. Watts, commander, 1st Infantry Division and Ft. Riley, Kan., briefed members on the total Army and its relationship with AUSA at the other meeting.

Japan Chapter. Lt. Gen. Willard W. Scott Jr., superintendent of the U.S. Military Academy at West Point, N.Y., gave a talk at a recent general membership meeting on the history and traditions of the academy.

Stuttgart Chapter. The chapter held its annual general membership meeting, at which Capt. Dieter Herzing, regional chairman of the German Armed Forces Association, spoke. The newly elected chapter board was also installed.

Daniel Boone Chapter. Two thousand members and guests participated in the chapter's annual picnic held at Keyes Park, Ft. Knox, Ky. The festivities featured children's games, displays, combat vehicles, music by the 113th Army Band and an auction, which benefits the chapter's programs.

Des Moines Freedom Chapter. Retired Brig. Gen. Ed Bird, a former World War II and Iowa National Guard commander, discussed the North African and Italian campaigns and the 34th Infantry Division while speaking at a chapter membership dinner.

Henry Leavenworth Chapter. AUSA's CSM Douglas S. Russell, USA, Ret., director of Retiree Activities, spoke about what the Association is doing to help soldiers and their families. CSM Russell addressed a meeting held for the post's senior noncommissioned officers.

Berlin Chapter. Maj. Peter Sidle, officer in charge, American Forces Network (AFN)–Berlin, spoke to the chapter's corporate members during a luncheon held at Harnack House. He gave a presentation on the network, which included a locally produced television tape. Following his presentation, members were given a tour of the AFN–Berlin facility.

New York–Col. Joseph Markle Chapter. Retired Maj. Gen. Bela Kiraly, Hungarian Army, spoke on "Stalin's Post-World War II Invasion Plans for Yugoslavia," at a chapter luncheon. Gen. Kiraly, now a professor, is director of the Programs for Society in Change, City University of New York, Brooklyn College.

Gen. Creighton W. Abrams Chapter–Hanau Subchapter. Nineteen teams participated in a military stakes competition, which included military skills ranging from land navigation to weapons assembly to river rafting.

Ft. Leonard Wood–Mid-Missouri Chapter. More than 5,000 members and guests participated in a chapter-sponsored *volksmarch.*

Sunshine Chapter. Lt. Gen. Charles P. Graham, commander, Second U.S. Army, Ft. Gillem, Ga., discussed the quality of today's soldier. He was attending a chapter meeting held at the Sweetwater Country Club in Longwood, Fla.

Greater Augusta–Ft. Gordon Chapter. Eight thousand military and civilian members ran in the "Beat the General Run" sponsored by chapter corporate members, who provided T-shirts, trophies and other prizes. First Lt. Rodger Hughs took the first-place trophy and the chapter raised over $6,000 for soldier support programs.

Ft. Dix Chapter. Sgt. Maj. of the Army Glen E. Morrell discussed the Army's role in a speech given at a chapter membership breakfast with more than 1,000 members in attendance.

Wisconsin Chapter. Former Army combat

ASSOCIATION OF THE U.S. ARMY

AIMS AND OBJECTIVES

THE ASSOCIATION OF THE U.S. ARMY shall be an organization wherein all who are in accord with its objectives may join in the exchanging of ideas and information on military matters, and in fostering, supporting and advocating the legitimate and proper role of the Army of the United States and all of its branches and components in providing for and assuring the nation's military security.

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nurse Diane Carlson Evans was the feature speaker at a chapter dinner. Her talk, "O Silent Sisters," reflected on the Army Nurs Corps which served in Vietnam. She is no raising funds to build, in Washington, D.C a monument to nurses.

Seattle Chapter. AUSA senior associate, L Gen. Richard G. Trefry, USA, Ret., gave a AUSA and Department of the Army upda briefing to members attending a chapt membership dinner.

Albuquerque Chapter. Lt. Gen. Fred K. M haffey, deputy chief of staff for operation and plans, Department of the Army, discusse "Landpower in Transition," while speakin at a chapter dinner cosponsored by the R serve Officers Association.

Gen. William C. Westmoreland Chapte Curt Cave, a Reno, Nev., businessman an commercial airline pilot, discussed Sovi bloc operations in the Middle East and A rica at a dinner meeting which honored pa chapter presidents, including Nelson Ne founding president.

Central Ohio Chapter. Lt. Gen. Edward Peter II, commander, Fourth U.S. Army, F Sheridan, Ill., discussed at a chapter dinn meeting the mission of his command an the importance of the Total Army.

AUSA–ROTC Company Notes

Terry D. Allen Jr. Company (New Mexi Military Institute). Maj. Frederick Wiant di cussed the "regimental manning syste while addressing a company monthly mee ing. The cadets also hosted a meeting fe turing Medal of Honor winner Lewis Richa Rocco, who spoke on "Korea in the Eighties

Lamar Company (Lamar University). G Bei–Ping and Li Ping–Yun, guest schola at the university's communications depa ment, were the featured speakers at a co pany meeting. They discussed military ed cation in Chinese secondary schools a gave a general description of the life of enlisted soldier in China.

Carson–Newman College Company (Ca son–Newman College). The company ho ed a Junior ROTC Field Day, which featur displays, athletic events and refreshment

VPI Company (Virginia Polytechnic Ins tute and State University). The Army R TC co-op program was the theme of a me ing featuring David Chapman, West Virgi District Corps of Engineers; Will Simmo engineer, Aberdeen Proving Ground, M Charles T. Tate, assistant director, VPI&S Co-op Office; and Maj. Richard Payne, Ar ROTC recruitment officer.

Maj. Gen. Ernest N. Harmon Compa (Norwich University). Richard Derry fr the General Electric Corp. was the princip speaker at a company meeting. A veteran World War II and Korea, Mr. Derry has be with General Electric for over 30 years a is now systems configuration manager the Burlington, Vt., branch. He used a c away drawing to show the internal workin of a GE rotary cannon, and elaborated on uses for air, sea and land combat. Fil were shown on the Vulcan air-defense sy tem and the latest mobile weapons syste

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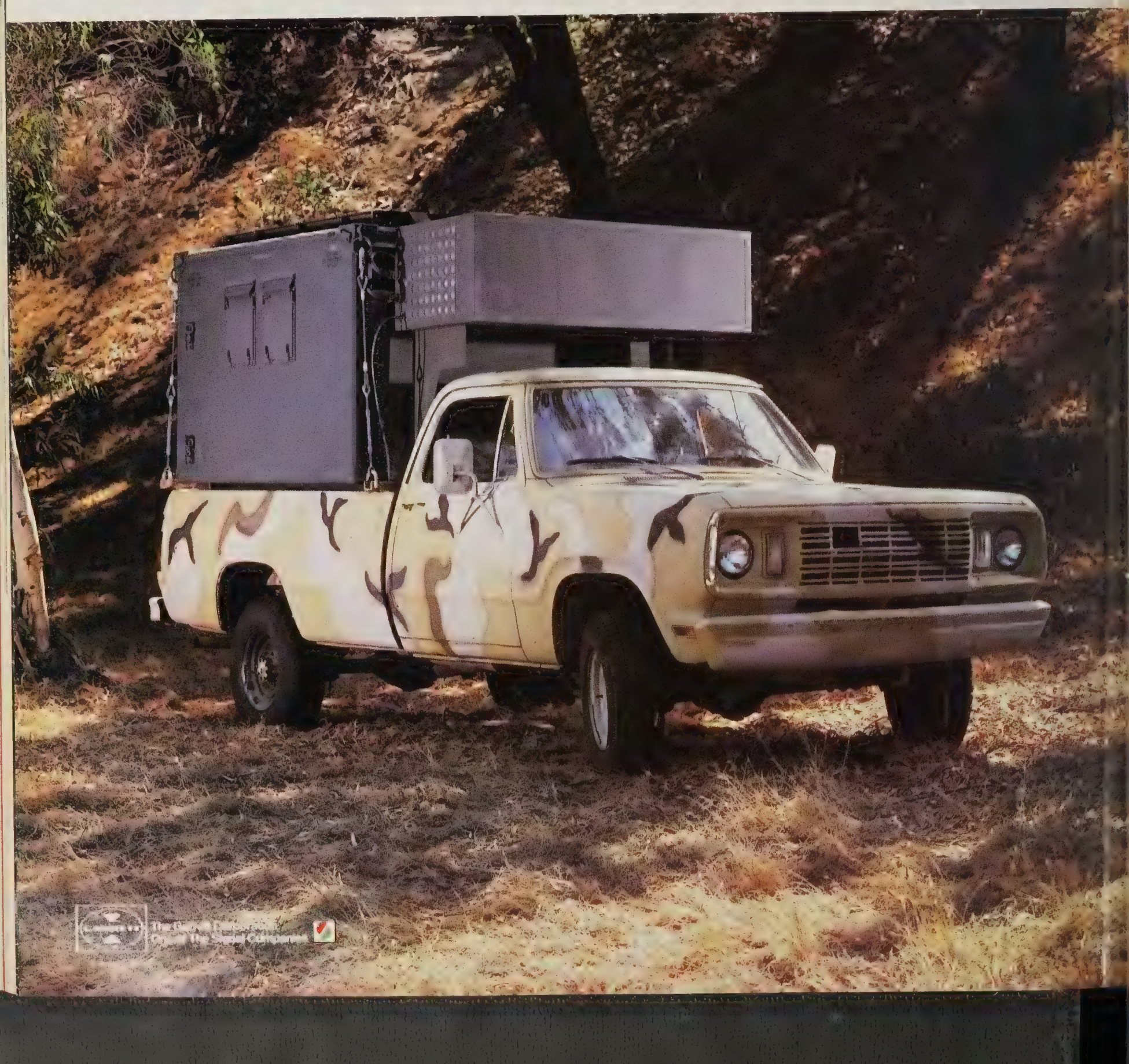
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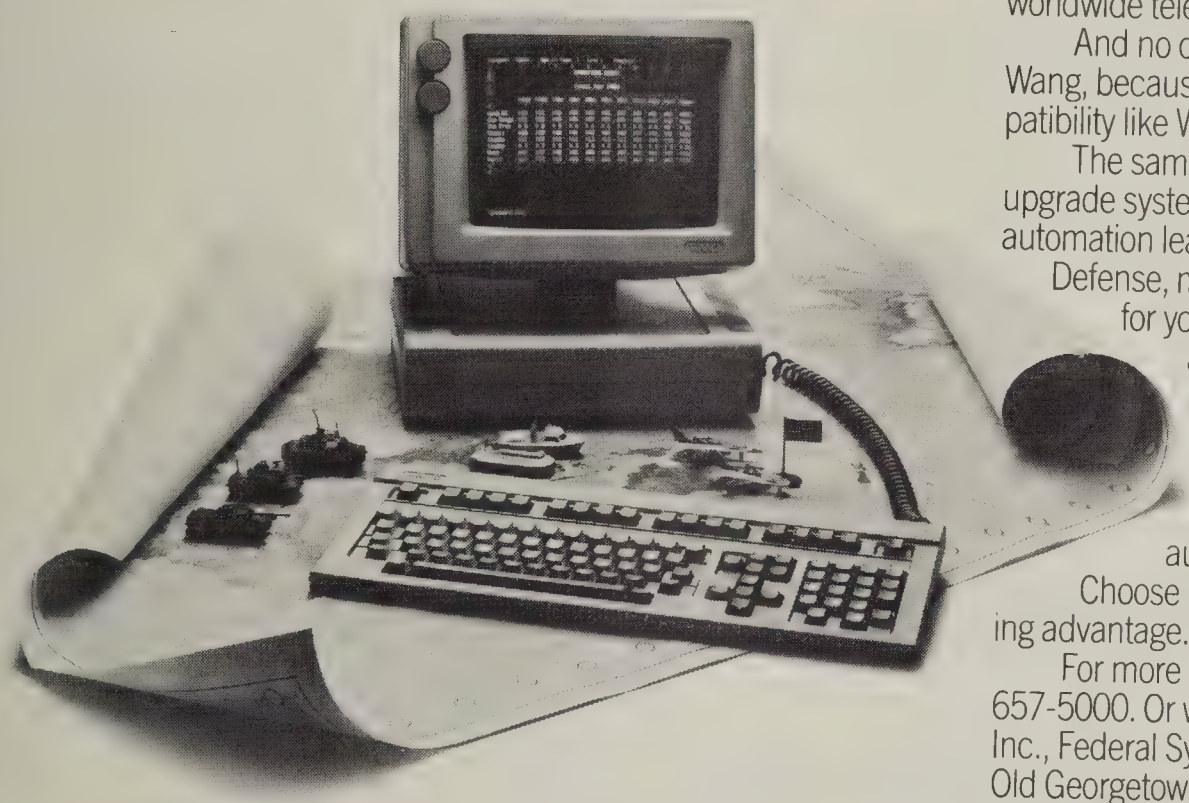
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ARMY
The Magazine of Landpower

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Vietnam Memorial Sculpture: 'A Symbol for the Living'

■ Please accept my congratulations on he excellent January cover of ARMY. The Vietnam memorial sculpture, itself a masterpiece, is beautifully captioned by the quotation from the anonymously written poem.

As a pre-Vietnam retiree, I empathize with those men who answered the call to hat struggle and who returned battered n spirit, traumatized by what they had een ill prepared to confront and reject-d, in large part, by the nation which ad dispatched them. There is no more ppropriate combination of memorial trib-tes to those who lost their lives in that ruggle, and to those whose "private urden" the experience became, than the



Letters

over of your publication.

Enlarged in quality reproduction, and ith the entire poem printed beneath, it ight well be hung in every schoolroom our nation; not to propagandize, but initiate deep, cogent contemplation.

In that piece are the images of duty, nor, brotherhood, courage in the face the unknown, and an acknowledgment the ephemeral qualities of mortal life d the eternal aspects of the soul.

Kudos to your selection committee!

LT. COL. SABIN C. TAPLIN
AUS, retired
nd O' Lakes, Wisc.

■ As a member of a joint command, often have an opportunity to read other vice magazines. I applaud L. James der's "The Sentinels Who Watch Over ll of the Fallen" ("Front & Center," uary), and I commend your photog-her for his excellent cropping of the er photo.

He was able to capture the true mean-of the memorial—a strong, solid state-nt for those of us who have served have gone on. He successfully elimi-ed from the picture the beer cans, e goblets, old boots, coins, medals, ons, badges, patches, poems and oth-rash that litter the base of the sculp-e.

was on temporary duty in the Wash-ton, D.C., area and was able to see memorial on 12 November, 1984, the following its official unveiling. As can see from my list, I was appalled ts immediate desecration.

or those who continually march in nory, cry out for recognition and speak stantly for Vietnam veterans, I, too, nuts! These bronze men have all the medals ever awarded, all the patches ever worn. They are a symbol for the living not a trash can for the past. I for one am damn tired of seeing a bunch of "war heroes" reduce the entire Vietnam scenario to a single statement, "This Bud's for you!"

M.SGT. JOE PROKOP
U.S. Marine Corps
Seffner, Fla.

Training Rehashed

■ Col. Andrew P. O'Meara Jr.'s and Lt. Col. Raymond C. Hartjen Jr.'s initial premise in the introduction to systems approach training ("Systems Approach to Combat Training," January) is that the Army suffered serious initial defeats in World War II and the Korean War because of apathy and lack of a systematic approach to training and readiness.

But not this time: brilliant Army staff thinkers have uncovered a whole new method to solve the dilemmas of the past. The systems approach to training will allow each training or combat task to be broken down and isolated so that each soldier can be trained and examined on his ability to perform.

Now we are told those skilled soldiers must be part of cohesive, well-trained, well-led units and that our soldiers' tours of duty must be stabilized. Above all, however, the task analysis is the thing. Only through systems approach training can the Army really determine how to win on the field of battle.

By carefully dissecting each action and determining what a soldier's job requires, we can eliminate wasted training time and concentrate on the essentials. Scientific analysis allows the discard of intuition, guesses and tradition of past training. The authors succinctly observe that a soldier's effectiveness and courage have little impact on his ability to perform an infantry mission. A better gauge is how well he performs the steady-hold functions in firing his weapon.

The article is an example of the triumph of process over substance. It characterizes an Army training philosophy that has proliferated since the halcyon days of Training and Doctrine Command's (TRADOC's) birth. The attempt to reduce training to an exact science has become an all-consuming passion.

Whole warehouses have sprung up to store the volumes of staff paper, soldiers' manuals, skill qualification tests, Army training and evaluation programs, pamphlets and a host of other printed materials. These endless reams of paper are merely restatements of past writings concluding the obvious in different words.

We greet each new gimmick as if it were the Holy Grail, forgetting the fact that Gen. Friedrich Wilhelm von Steuben introduced training manuals and checklists to the Continental Army at Valley Forge, Pa. No human being could read and assimilate all this verbiage.

We only confuse ourselves and our soldiers by constantly training to popularize new fashions in how to restate the obvious. Furthermore, isolation of the training task and printing it is only a fragment of the training task.

To substantiate their thesis, the authors take aim at a perennial TRADOC ox, the airborne training program at Ft. Benning, Ga. This activity has been the victim of similar scrutiny by TRADOC analyses for over 15 years, yet its process has been repeatedly validated.

There is more to airborne training than the mere mechanical process of parachuting from an aircraft. Confidence must overcome fear, the unusual must become routine, and discipline is crucial. We expect the soldier to jump from the aircraft *and* fight.

We seek an airborne school graduate who is more confident, able and aggressive, and all this from a young person who often has not had his first airplane ride. Yet the authors declare motivation is not an issue. Morale and esprit are irrelevant, not skills, and are developed in the unit. The authors are wrong. Motivation, morale and esprit are integral to any successful training program and any progress should be structured to this end.

Nowhere in the article is the ugly word "discipline" to be found. Allusion to the idea may be inferred in the newspeak terms of "legitimate, referent and expert power." The analysis and manipulation of training systems to achieve a desired

process is pointless unless the training program it spawns is performed in a rigorous disciplinary environment.

We failed in the opening days of World War II and Korea because our equipment was outmoded, our units understrength and our men unprepared. However, training programs and systems existed that could have modified the outcomes. The process was there but our priorities were not.

So what does that mean for today? Is the U.S. Army concentrating on the essential task of rigorous, imaginative, well-planned, comprehensive combat training or is training a helter-skelter occurrence? Are our soldiers ready for battle or are they more competent at garrison duties?

Anyone can learn to drive a truck or pound a typewriter, but a soldier must do these things and fight as part of a team. That recognition must be integral to any Army training scheme.

Rather than publish reams of new paper that harried commanders lack the time to read, we need to simplify and make what is already in place work better. The time devoted to gathering, correlating, tabulating and investigating useless data is incredible.

The results have had little impact on an Army that spends an excessive amount of time on housekeeping and other nonproductive activities. We should first decide that training is truly important and necessary for survival and then go about it in a way that integrates spirit and the process.

COL. FRANK G. WALTON
U.S. Army, retired
Egg Harbor City, N.J.

Training Reservists

■ Majs. Donald B. Skipper and John T. Fishel, U.S. Army Reserve, authors of "Equipment Compatibility Problems Denigrate Readiness of Reserves" (February), are in error in their chart entitled, "Proportion of Army Reserve Components in the Total Forces" on Page 36. The Army Reserve has no combat divisions; they are found in the National Guard with the bulk of them in the active Army. Likewise, the National Guard has no training divisions; they are all found in the Reserve. *(See correction on this page.)*

As these two officers indicate, "force modernization training" is a tough nut to crack when speaking of training reserve components units. Yet the time required to train members of the reserve components must be balanced against the time they can get away from their civilian jobs.

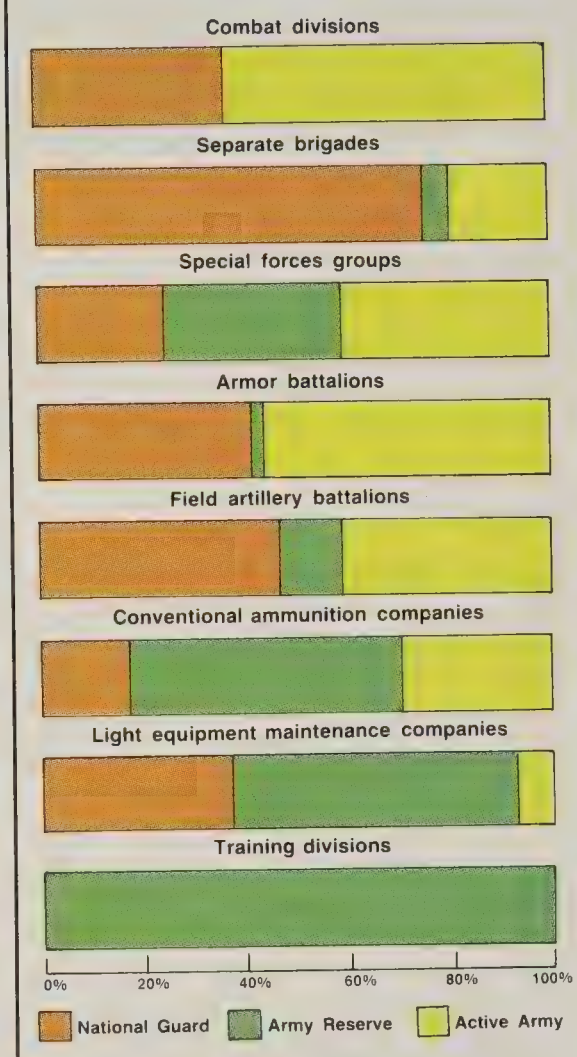
Many can spend the necessary weeks of active duty for training it would require, as witness the people we send to service schools and other types of training. Many others, however, cannot without jeopardizing employer or family relationships. Demands being placed on the reserve components units are fast approaching the saturation point. Whether we like it or not, we in the reserves may soon have to say, "Whoa—we have all we can handle at this point."

Further, while I believe three-week annual training periods are feasible for selected reasons such as Reforger participation, I do *not* believe the country's employers and families are ready to buy three- or four-week annual training periods for everyone.

BRIG. GEN. BARRY W. YOUNG
Waunakee, Wisc.

Correction

Proportion of Army Reserve Components In Total Army Forces



Source: Reserve Forces Policy Board, *Readiness Assessment of the Reserve Components, Fiscal Year 1982*, Office of the Secretary of Defense, Washington, D.C., December 1982.

The chart entitled 'Proportion of Army Reserve Components in Total Army Forces,' on Page 36 of the February issue of ARMY *is in error in two places in which the wrong color appears. The green section under 'combat divisions' should have been yellow to indicate that approximately 60 percent of combat divisions are active Army. The last item on the chart, 'training divisions,' should have been green to indicate that training divisions are Army Reserve. A corrected chart appears above.*

Doctrine Reconsidered

■ William S. Lind's letter in the January issue ("Synchronization: A Means Only") scared me. I understand that he is an adviser on military matters to Sen. Gary Hart (D-Colo.) and is one of the leading advocates of maneuver warfare, which favors deep strikes behind enemy lines (also known as AirLand Battle).

Mr. Lind writes like an academician who has had no real experience in the field that he claims to be expert in. I do not believe that he has the slightest concept of what actual combat is really like. He uses German military words and phrases to sound knowledgeable, but he really doesn't know what he's talking about.

He believes that an observation-decision-action cycle must be slow and must degenerate into attrition warfare. He also believes that all attrition warfare is a "no-no."

At Stalingrad, the Russians used attrition warfare in the battle for the city which forced the Germans to concentrate their best divisions there. Only after the Germans suffered heavy casualties and became bogged down in the battle for the city, did the Russians commit their massed divisions against the weakly held German flanks to counterattack, encircle and destroy a German army. This was a synchronized, planned set-piece battle.

The Russians had attempted to use the same tactics the year before during the battle for Moscow and almost succeeded in destroying the German armies that were engaged there.

Mr. Lind believes that there is a better way to defeat an attacking enemy. He suggests that we use our meager resources to strike deep behind the enemy's attacking forces in order to disrupt the second-wave divisions and resupply convoys even before the enemy's assault divisions have been weakened by attrition.

Not only does this concept frighten me, it also has worried Col. T. N. Dupuy, U.S. Army, retired, who has written:

> Don't assume that our foes are stupid, and we are smart; that they will be rigid, and we shall be flexible; that we know all about how to take advantage of their doctrine, but they will be unable to take advantage of ours. Don't delude yourself. We may be inviting disaster by making the task of a Soviet breakthrough all the more easy by diverting all-too-thin resources from holding the line to attack rear areas of the enemy's forces. We may lose the war quickly, in defiance of fundamental principles and verities of war throughout history.

Gen. Bruce Clark, who commanded Combat Command B of the 7th Armored Division during the Battle of the Bulge, when briefed on the AirLand Battle concept, thought that it was too complicated, the replacements for men and equipment would create problems in time and

ve faced an enormous risk in case it lidn't work.

When he and his adversary at the battle of St.-Vith were later asked how the actics that were used there could be used n case of a Warsaw Pact attack on NA-O, they recommended three steps in de-ense: wear down the Russian attack and low it down while still maintaining the ntegrity of our forces, hold as best we an while awaiting reinforcements, and ounterattack as soon as feasible and rive the Russians back.

I would caution all exponents of Air- and Battle not to bite off more than ney can chew. Actual battle is not a war ame, and a major mistake in strategy nd tactics may result in total defeat. I el strongly that we may be going off ne deep end with our new battle con-pts.

WALLACE J. KATZ
ckson Heights, N.Y.

ack to the 'Gap'

■ Col. Griffin N. Dodge's, U.S. Army, tired, perception of one of the most se-ous problems with Army aviation is rrect ("It Is Time to Close 'the Gap,'" ront & Center," December 1984). The p he refers to has gradually widened ring my 18 years in Army aviation. ARCSA III (aviation requirements for e combat structure of the Army) elimi-ted most of the separate flight detach-nts that directly supported individual igades and simultaneously terminated important link. The flight detachment mmanding officer also served as avia-n plans and operations officer. When left, he had to be replaced by an offi-who had to learn from scratch what my aviation could do for his unit.

Another major issue brought to light Col. Dodge are the "promises" made Army aviation and the all too fre-nt failure to follow through. I cringe certain marketing briefings I attend en someone in the aviation chain of nmand expounds on capabilities I know not exist.

hope Col. Dodge's worries about the v Aviation Branch are unfounded. I e my hope on the lieutenants and tains who are spending all their time light assignments. The insights gained their predecessors from their "ground gnments" never came close to equal-their obvious inability to lead their s in their primary function—flight. he tables of organization and equip-it being developed by Ft. Rucker, ., for implementation around 1986 w the obvious lack of what is required nake an aviation unit function with capabilities they are marketed as hav-As the average experience and skill l of the officers in aviation increases hould the quality of their work.

ARMY **invites letters to the editor. The subject matter may be about material that has appeared in the magazine or about any topic which the writer feels would be of interest to *ARMY* readers. The editors reserve the right to edit letters for reasons of style, accuracy or because of space limitation. All the letters must be signed, and while we prefer to carry the writers' names we will consider requests for withholding them if there is a compelling reason to do so.**

The Editors

As a utility and cargo helicopter pilot, it is hard for me not to notice the almost universal interest shown by commissioned officers in the air attack brigades. There is a definite belief that this is where the glory lies. This attitude, as recognized by Col. Dodge, does not foster team spirit.

Who knows, if Gen. Maxwell R. Thurman keeps up his interest in Army aviation, many of the problems that Ft. Rucker has been all too willing to overlook may be solved.

CW4 HOMER L. BENTLEY
Savannah, Ga.

Controversy Continues

■ Maj. Scott R. McMichael's "Cerebrations" article, "CGSC Change Necessary, Overdue" (December 1984), brought out a fact that is agreed on by almost all field grade officers with whom I've talked. Most of the officers he mentions have their own promotion system; that is, dentists, doctors, veterinarians and the like. Their promotion boards certainly could understand if these officers did not attend the Command and General Staff College, and, therefore, it would not be a prerequisite for their promotion.

Limiting college attendance to those who really need it would enhance the Army's capabilities and provide the trained combat and combat service officers required. In reality, I'm afraid Maj. McMichael is "tilting at windmills" to try and produce such a change as he advocates in his article.

MAJ. L. ALLYN NOEL
Ft. Eustis, Va.



"Of course I'm ready to order—that's what I get paid for!"

■ We read Maj. Scott R. McMichael's "CGSC Change Necessary, Overdue" ("Cerebrations," December 1984) with incredulity. After about three readings, it became apparent that the article was not a joke but meant to be a serious opinion. It did not seem possible that in these times there existed a field grade officer unaware of the lessons of every war relative to the necessity of having a strong combat support arm.

There has not yet been a war fought such that losses due to shortfalls in health care did not exceed battle casualties. Certainly the Combat Studies Institute must be aware of the DNBI (disease nonbattle injury) category of losses.

Maj. McMichael states, "Not attending the CGSC will not adversely affect their ability to meet the expectations and needs of the Army." The expectations of the Army for the combat support (CS)/service support (CSS) are not different than for the combat arms. We have the same mission, as a quick check of the college's curriculum will confirm.

Who will be responsible for putting together the medical support for our soldiers? (There *will* be both battle and nonbattle injuries.) Does he really believe that a corps or division surgeon after attending a four- to six-week short course in the combat arms will be able to adequately fight tomorrow in a "come as you are" war, which is probably not going to permit any on-the-job training? It is hoped that when a commander requests medical support for an off-set battery, he will be speaking with a surgeon who has some knowledge of the tactics.

The major also claims that " . . . attendance of members of these branches . . . lowers the caliber of instruction . . . to the novice level." I (Col. Molnar) just don't remember that "these others" lowered any standards. Further, a review of the branches of the instructors would show that these high-powered classes are, in fact, taught by "these others."

He also claims that "elimination of these . . . would increase the slots available for officers who have a greater need." He could save a lot more slots. Why not just eliminate all CS/CSS classes of instruction and combine them into a four-week period? CGSC could then be cut down to 4½ months.

Certainly if the others who are learning at the novice level can absorb all there is essential to know about combat arms, the combat arms who are apparently blessed with higher powers of men-

tation could learn all there is to know about CS and CSS in four weeks.

Actually, if this reasoning is carried to its absurd conclusion, why not just eliminate the CS/CSS from the Army? Certainly the combat arms could learn all these functions in four to six weeks and perform them at a tremendous savings in logistical expenditure during mobilization.

Maj. McMichael indirectly expresses the opinion that attendance at CGSC has some ticket-punching advantage for the CS/CSS officer. Speaking only for the Medical Corps, this is definitely not so. We can achieve the same rank just as quickly serving only at medical centers without ever donning a protective mask in the middle of a winter Reforger exercise or spending nine glorious months in Kansas. We attend strictly on a voluntary basis only to serve the soldier better during mobilization.

There is no career benefit to subjecting oneself to the "rigorous" training of the CGSC and to accepting field assignments where one runs the risk of failure by virtue of being out of one's environment (medicine). What combat arms lieutenant colonel would risk an assignment in a hospital with no prior medical background and with the rating scheme including only a highly motivated and critical physician staff, for three years?



This is the risk that a lieutenant colonel in the Medical Corps takes when accepting a division surgeon's slot and baring his "novice" font of knowledge and experience. Fortunately, Lt. Gen. Carl E. Vuono (commander of the Combined Arms Center) feels somewhat differently than Maj. McMichael.

In his letter to commanders taking the precommand course he states: "Do not make the mistake of dismissing some subjects because they 'do not pertain to every branch.' In the combined arms Army that is no longer the case . . . everyone—service support as well as combat arms—must understand the AirLand Battle."

If we do not work together, do not understand each other, do not exchange ideas among all the branches, only the soldier on the battlefield will suffer. As always, the army with the most poorly integrated CS/CSS will lose the battle.

The year at CGSC was great; the combat arms friends were great. The entire experience was invaluable personally and of already proved benefit to the Army and the soldiers we have supported.

COL. ALBERT C. MOLNAR, M.D.
COL. HERBERT E. SEGAL, M.D.
Ft. Jackson, S.C.

■ I have great respect for the opinions of Maj. Scott R. McMichael in his recent "Cerebrations," piece in which he strongly recommended that the Command and General Staff College resident course be restricted to combat and combat support officers or, in essence, be made an advanced course for line officers, but I could not disagree with him more ("CGSC Change Necessary, Overdue," December 1984).

He listed four main reasons. First, he states that only line officers need the resident education. During the time of the old School of the Line, the organization, equipment and maneuvering of the Army was comparatively simple—hence the term "line officer." The line officer led his unit to the field of operation, occupied a trench or advanced across the battlefield in a line, died in a line and so on. The support troops were immobile and safe to the rear.

Today an organization must be prepared to operate and function in isolation in rapidly moving situations. This

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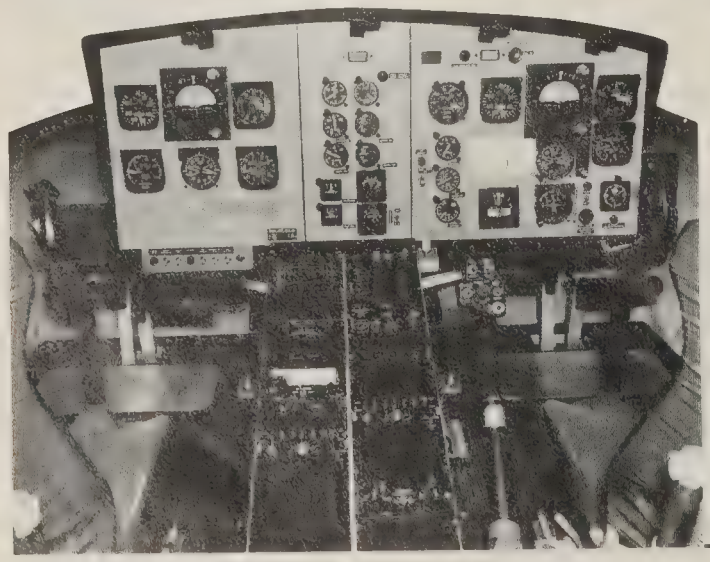
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obviously requires more intense training, cooperation, mutual respect and understanding of the technological and other abilities of all units in the organization. These surely cannot be obtained in branch schools or during infrequent short maneuvers. These skills need to be attained in the comparative relaxed and long-term study and associations with all the other branches as afforded in an academic situation.

Second, he says that attendance by other officers lowers the caliber of instruction. This is largely conjecture. Most nonline officers are required to take CGSC correspondence courses before attendance, and I would suspect that most line officers would greatly and equally benefit from any special additional instruction given during the course. I believe that research would reveal that the doctors and lawyers and others subsequently hold their own with most of the line officers. For example, the first Monday of the 1952–53 class, Maj. Gen. Hodes ordered a surprise two-hour map reading test without notes. Ninety percent of the class failed even though most of them had served in World War II or Korea. Study revealed that the majority of the ten percent were nonline officers who had been taking summer CGSC correspondence courses. Their morale was exceedingly high as they headed for the golf course that next Saturday morning while the unhappy "line officers" were headed toward their make-up map reading examination.

Third, Maj. McMichael mentions the increase in the number of slots available to line officers; true, but not necessarily desirable. The unofficial but generally acknowledged link between graduation from CGSC and promotion makes attendance quotas at that institution zealously sought and jealously guarded. This is not a valid reason for adversely affecting the whole Army in the performance of its current mission.

Fourth, the major claims the shortfall could be replaced by CGSC correspondence courses or a short resident branch school. Both these avenues now exist and are widely used, but they will never replace the benefits accruing to all branches from the present CGSC resident course. Over 40 years ago as a young major, I thought it necessary to come up with ideas. To my delight some were adopted, but many were rejected by older and more mature heads. This is the result I hope for in this instance.

After Maj. McMichael reads this letter I do not expect him to resign his commission and enter the ministry because, in spite of the loss of "97 slots" in the CGSC residence course, line officers will continue to perform their assigned duties in an outstanding manner and receive their fair share of promotions. I hope they will also be able to pass any future surprise map reading tests—possibly with help from some "unqualified" doctors, lawyers, chaplains and finance officers.

COL. L. W. CASSELL
U.S. Army, retired
Virginia Beach, Va.

Pride That Shows

■ I am certain that it was with pride that every officer in the Judge Advocate General's Corps (JAGC) read T. James Binder's "Their Battlefield Is the Courtroom" in the November 1984 issue. The training provided by the Judge Advocate General's School has provided JAGC officers with the ability to furnish top-notch legal advice and services and thus has contributed to mission accomplishment at all levels of the Army.

The article referred to the recruiting success enjoyed by the corps following the creation of the recruiting office in 1980. Much of this credit belongs to the three fine officers selected to first staff the office. Majs. Tim Naccarato, Don DeCort and Fran Moulin breathed life into the office, gave it definition and set a standard to be followed through the years.

The caption for the classroom scene pictured on Page 48 is apparently in error. The officers pictured were attending the staff judge advocate's course offered in the spring of 1983. This course trains JAGC officers on orders to assume deputy and staff judge advocate positions.

You are to be complimented on the 1984–85 *Green Book*. As well as providing the big picture of what this Army is and does, it is an invaluable reference book.

MAJ. JAMES H. ROSENBLATT
Schofield Barracks, Hawaii

■ Editor's Note: ARMY *regrets the error in the photo caption mentioned, which was written based on information we received at the time.*

Okinawa Archives

■ This year is the 40th anniversary of the end of hostilities on Okinawa, Japan. Many armed forces units based here will be commemorating this historical event by looking back into the past and remembering what took place at that time.

At the southern tip of Okinawa where the final stand of the Japanese soldiers took place, the Okinawa Peace Prayer Archives is striving to be on the same level of representation as are the Hiroshima and Nagasaki Peace memorials. Three years from now the archives will be acquiring a new building, and a special project is under way to have a section for war-related articles loaned or donated to the archives by Americans.

Last year, American war veterans revisiting this island responded generously by opening up their "GI" bags and sending back their war souvenirs to this institution to "speak" to the visitors who flock to see them. Credit is given to donors.

To give your readers an example of what has been sent back and displayed, there are Japanese flags, old pictures of civilians, battle pictures, a surrender document, civil documents and the like. The donations have been warmly received in the local mass media and a translator will be put to work soon to translate the experiences of those who participated in the island campaign and who have sent in memoirs.

If there is someone among your readers who would like to loan or donate permanently to the Peace Archives, please contact me at: Ginowan P.O. Box 129, Ginowan City, Okinawa 901-22, Japan. I will be more than happy to send you information in reply to any of your questions. Thank you very much.

SHIZUO KISHABA
Okinawa, Japan

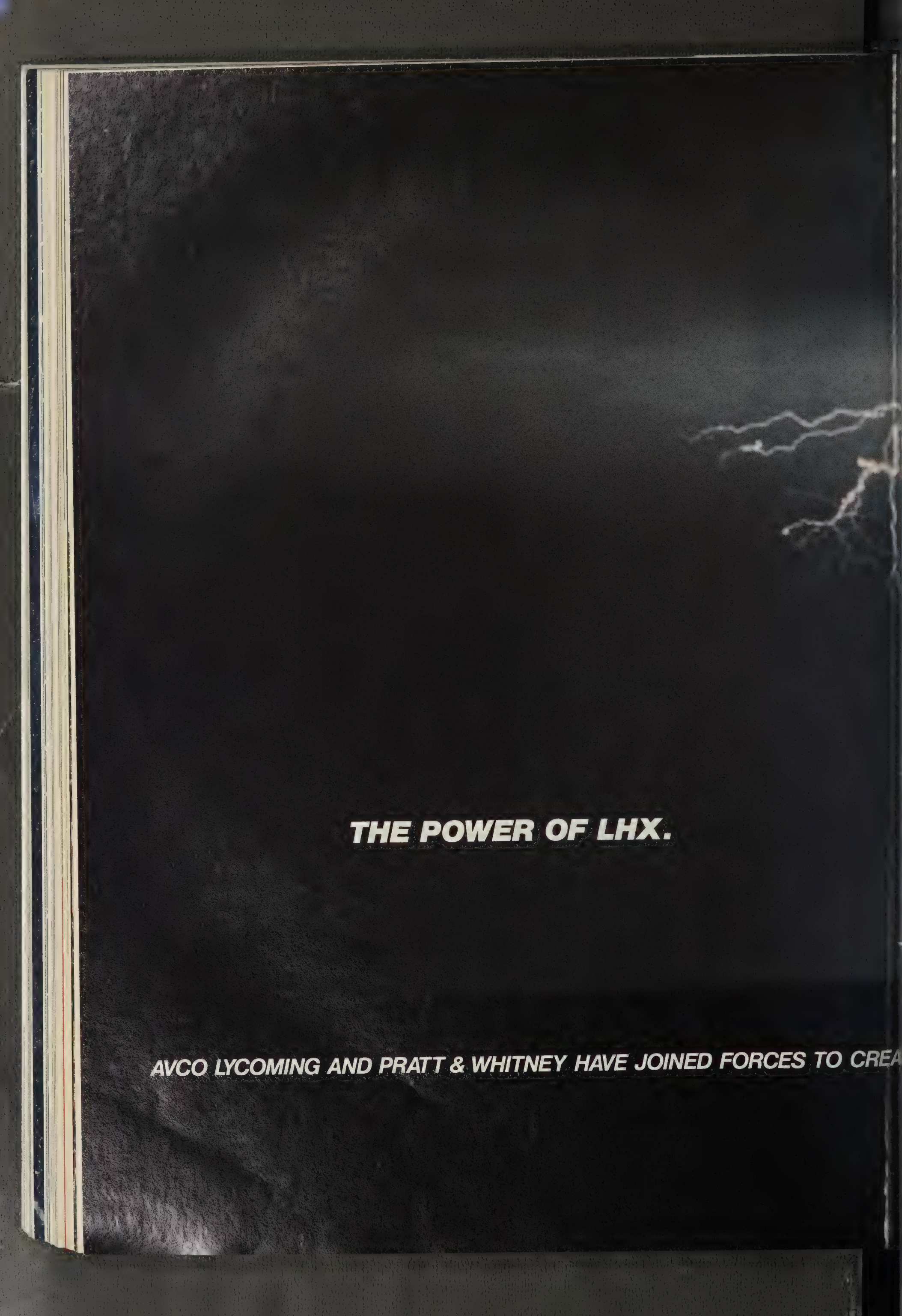
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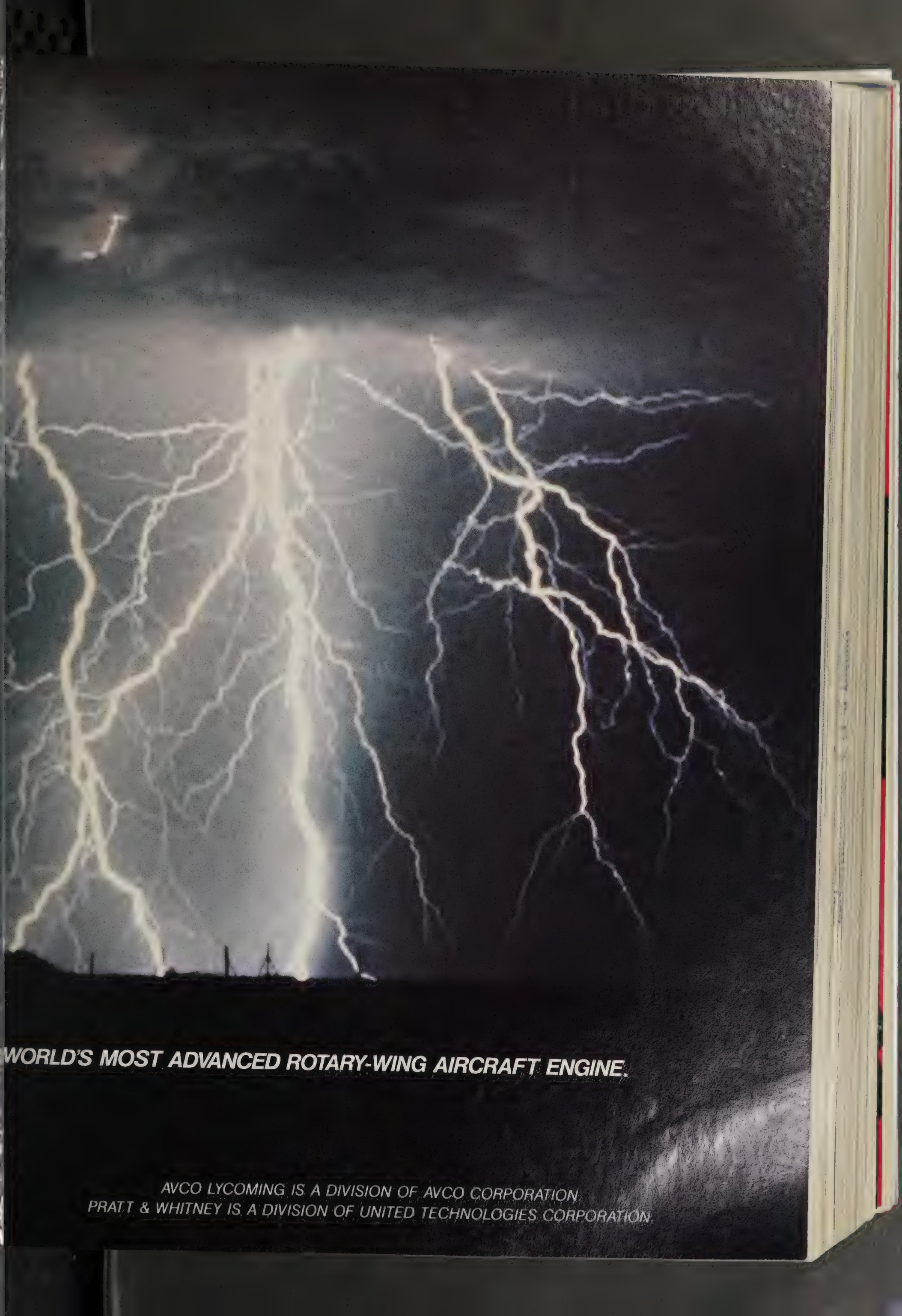
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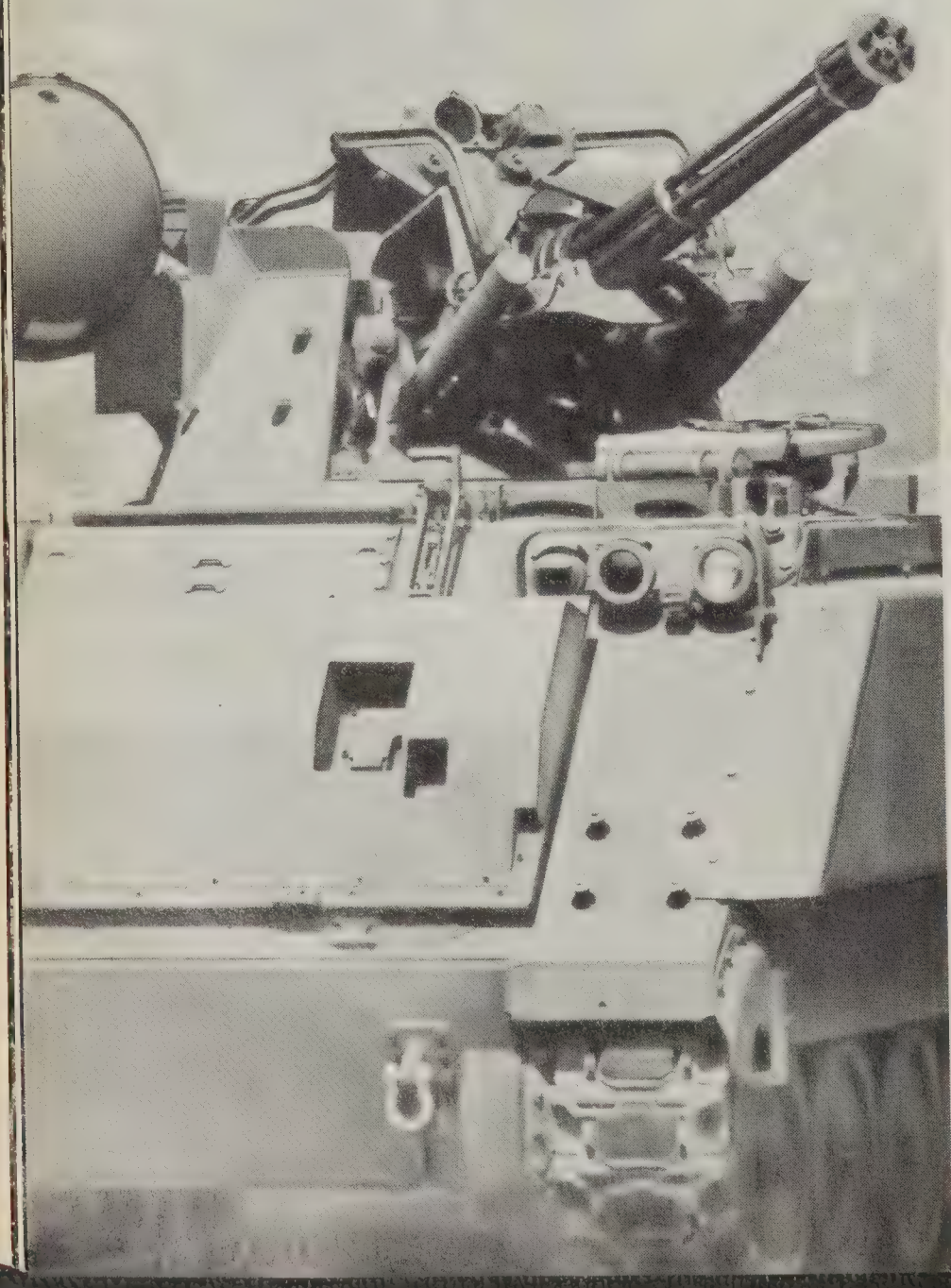
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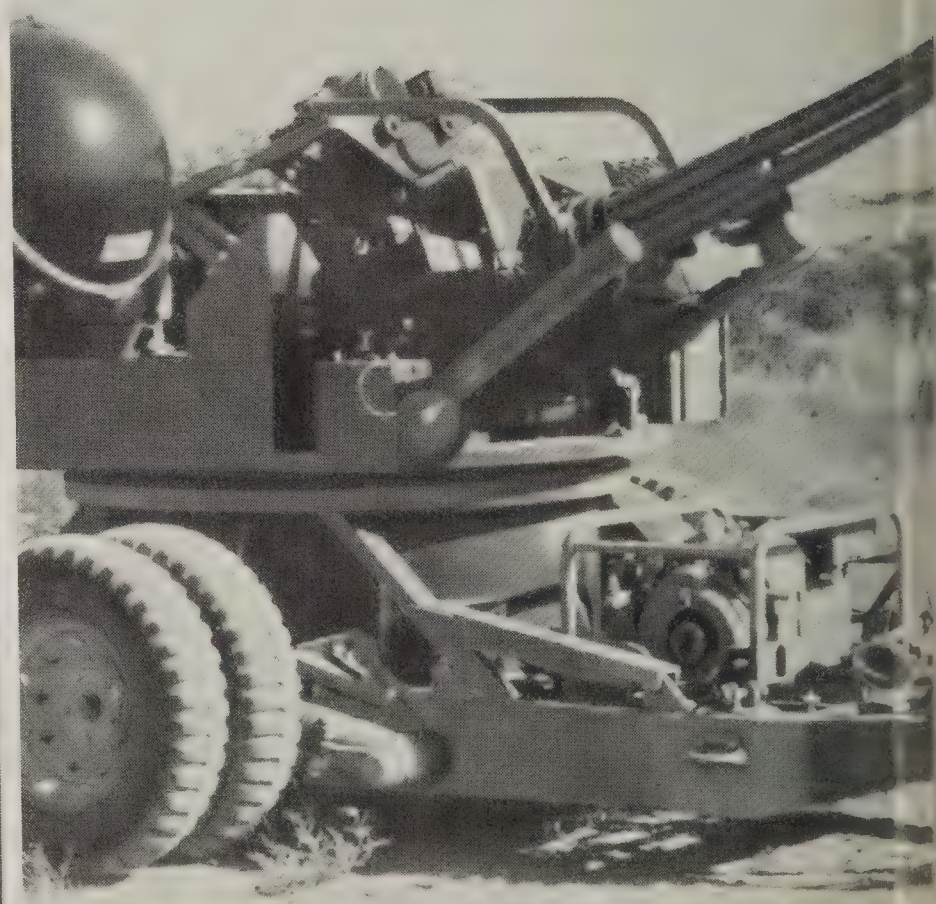
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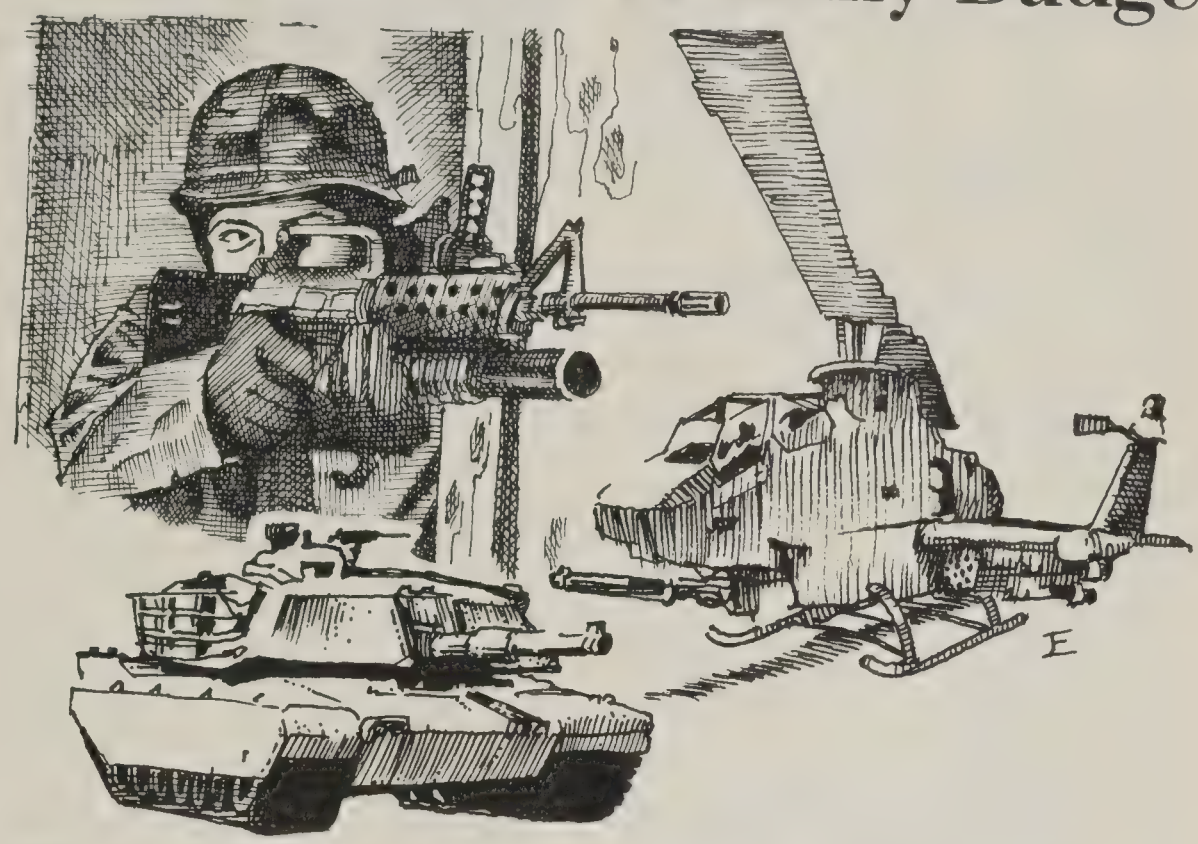




Proposed Levels of Spending Modest

Treadmill Trend Continues in '86 Army Budget

There are no radical departures in the $82 billion budget proposed for the Army in fiscal 1986, and no great change in the service's place in the national defense constellation. The Army is still in third place—a poor third, perhaps, considering the many deficiencies—with a budget share in the 26-percent range and no proposed increase in uniformed active-duty manpower. This pattern has persisted since the mid-1970s and is unlikely to change, absent the impact of a major war or mobilization.



Front & Center

After accounting for the effects of inflation, real growth in the Army's fiscal 1986 total obligational authority (TOA—what the service would obligate itself to spend in that and future years) is pegged at 5.6 percent. This is about in line with the six percent real increase built into the proposed $314.4 billion spending blueprint for the entire Department of Defense (DoD) and is bracketed by the Navy and Air Force figures of 4.5 and 5.8 percent, respectively.

At $74.7 billion, the Army outlays forecast for fiscal 1986—what the service will actually spend during that year—show real growth of 8.8 percent. While ower than the 13-percent jump from fis-al 1984 to the current year, it is still ubstantial: both figures reflect the pur-hase of new weapons authorized in pre-ious years, particularly in the Army's oom period of fiscal 1981–1982, when OA leaped by a cumulative 26.5 per-ent.

Despite the political abuse being heaped n the allegedly profligate ways of Secre-ary of Defense Caspar W. Weinberger, e proposed levels of spending are quite odest by the standards of the first Rea-an Administration. Typically, DoD asked r annual real growth in the 12- to 13-ercent range, but got that only in the rst two years: in the last three fiscal ears, annual increases in purchasing pow-have averaged 6.3 percent and would ave been nearly a point lower had it t been for the $6.6 billion "aircraft rrier bulge" of fiscal 1983, when nearly l of the funds for the two giant nuclear ips had, by law, to be appropriated, though it will take seven years to actu-ly spend the money.

Secretary Weinberger likes to make the point that the fiscal 1986 defensewide budget has already been cut by about $36 billion from the TOA levels forecast a year ago.

However, that was a very "soft" figure, part of the required five-year forecast and thus a sum total of straight-line projections, a process devoid of program decisions. Actual program cuts made in the "Rose Garden" agreement on the fiscal 1985 budget lowered these projections by about $25 billion.

The balance of $11 billion was announced in December but included only $2.5 billion in unspecified program cuts, being otherwise highly dependent on the device of a proposed governmentwide civilian pay cut of five percent and a military pay raise of three percent on 1 July, followed by what amounts to a 15-month freeze through the end of fiscal 1986. The legislative fate of the military pay proposal is uncertain, but it is a safe bet that the civilian pay cut will not be enacted.

The foregoing serves to explain, at least in part, why a large, bipartisan group of congressmen virtually rejected the defense budget before its submission last month, despite a proposed level of spending that is nominally in line with what Congress itself has approved in the recent past. Without the civilian and military pay proposals, real growth would be in the region of eight to nine percent.

In any case, whatever the historical levels, DoD spending would rise by $29.1 billion (in TOA) over the current fiscal year, and the Administration has proposed paying for it with matching cuts in domestic programs that hit members of Congress where they live—this, lest a budget already badly unbalanced becomes even more so, given the President's proscription against a general tax increase, the one element in the equation that all of the squabbling executive and legislative factions seem to agree on, at least for the moment.

The political situation inevitably creates a context in which defense is seen as "not doing its fair share" to reduce deficits, as though DoD and the services were just another collection of special-interest groups, with claims on the public treasury no more or less valid than any other segment of American economic life.

In such circumstances, when military spending also carries a big load of symbolic freight, sending often contradictory messages to foreign and domestic audiences, it is easy to lose sight of what an enacted budget is supposed to buy or, perhaps more to the point, what cannot be bought when service budget shares serve bureaucratic needs and legislative habit and seem immutable to redirection on any other basis.

Although the Army's fiscal 1986 budget is no disaster and the rate of real growth looks equitable (although that is not the real issue), the treadmill trend it represents is discouraging, especially since the service will have to take its "fair" share of congressional reductions.

If the fiscal 1986 budget is projected over a five-year Army program (not much evidence of even genuinely new directions can be seen in a single year), the service estimates that total spending for the period would be $40 to $60 billion below its legitimate needs. This is espe-

cially so, now that the Army has assumed responsibility for a 28-division force structure (active and reserve components). There are also expanded missions, such as the beefed-up air defense of NATO rear areas and the ability to conduct limited operations in parts of the world where U.S. forces are not now deployed, without disturbing the readiness or integrity of units earmarked for early NATO reinforcement.

Looked at in this light, a five-year program based on the fiscal 1986 proposals would not do the following:

- Provide the active military manpower necessary to fully man and support the 18-division active-Army force structure now contemplated and keep it in a reasonably ready state, all by the early 1990s. This is judged to require an active-duty force of 860,000 even given the current level of reserve components "round-out" participation and despite the fact that four of the divisions will be of the 10,000-man light design.
- Completely arm and equip even the active and reserve components units with the highest priority for early overseas deployment in an emergency.
- Allow all of the training resources required for the Total Force, such as ammunition and funds for field exercises.
- Fund all of even the highest priority new construction or catch up with the backlog of maintenance and repair on aging physical plants.
- Replace weapons and equipment withdrawn from stateside units to make up prepositioned stocks in Europe.
- Increase war reserve stocks of equipment, ammunition, parts and commodities to levels that will be sufficient for sustained combat while new production is being cranked up (a period likely to be very much longer, in most cases, than is now arbitrarily assumed).

In the late 1970s, the Army made a deliberate choice between active manpower and materiel, agreeing to hold its strength at a constant level in order to pay for badly needed modernization. True to that promise, which has become a firm commitment to the Administration and Congress, the strength level proposed for the end of fiscal 1986 is exactly the same as for the current year—780,800.

Within that total, however, there is a further shift in favor of officers, whose number would increase by 1,111 to 110,005, while enlisted strength is programmed to drop by the same amount to 666,245. This continues a trend of recent years, partly due to the expanded force structure and its need for more command and staff slots, and partly to AirLand Battle doctrine, which sees the battlefield integration of all arms taking place at higher command levels.

Continued on Page 15

'Vas You Dere, David?'

My grandfather used to tell a story about two immigrant friends who spent a great deal of time arguing. Usually their sessions started out with Ed describing some encounter he had had with authority or how he had dealt with one of the vicissitudes of staying alive. Invariably, his friend would pick apart Ed's performance, and tell him in great detail what he should have done. When he had finished, Ed would ask: "Vas you dere, Charlie?"

This phrase comes to mind in reviewing the latest manifestation of David A. Stockman's appalling penchant for shooting off his mouth as if he were a private citizen instead of a leading Administration voice on fiscal matters.

President Reagan's director of the Office of Management and Budget (OMB) startled listening U.S. senators and infuriated much of the professional military community in testimony when he called the size of the military retirement budget a "scandal" and said that "institutional forces in the military are more concerned about protecting their retirement benefits than they are about protecting the security of the American people" and that "when push comes to shove, they'll give up on security before they'll give up on retirement."

This was a gratuitous, mean and thoroughly reprehensible attack that deserves the outrage it has touched off inside the military services and out. What is particularly galling is that Mr. Stockman has impugned a segment of American society whose members are not only pledged to laying down their lives to protect national security, but who daily endure hardships, long hours and family disruptions that no other segment even approaches in terms of sacrifice.

If Mr. Stockman had ever been there, and he has not, he would never have delivered a baseless tirade which portrays military people as a selfish breed of schemers who are obsessed with living the good life after retirement and getting every buck possible out of Uncle Sam. If big money and the easy life were the only goal, there would be no soldiers, something Mr. Stockman would know if he ever had had to make ends meet as a military family man or had raised children during a career in which turbulence, stress, danger, Spartan living and long separations are routine.

Mr. Stockman is right in one respect: there is considerable concern about retirement benefits, although not nearly to the degree that he depicts and certainly not to the point where duty becomes secondary. Concern is justified because it is based upon the realization that certain influential elements, including Mr. Stockman, are actively trying to cut back on those benefits. They wouldn't be lavish even if they were the fruits of 20 to 35 years of safe, 9-to-5 service. Who wouldn't object to losing substantial chunks of future income, especially when it was, in effect, the core of a contractual obligation entered upon in good faith at the time of joining the service? Certainly Mr. Stockman would not sit silent if his own retirement pay was threatened.

There is much more to the argument than these few incongruities cited in response to the OMB director's outburst. Supporters of ample retirement pay have a strong case, although most would agree that the existing system needs improvements. Mr. Stockman and other critics would do their country a better service if they concentrated on making the system better rather than fomenting fears whose worst effect could be a recruitment crisis. No, Mr. Stockman, that doesn't support your point that mission comes second—soldiers and their families have a right to a decent living, too, in the service and beyond.

A curious aspect of Mr. Stockman's extraordinary performance is the absence of an immediate disavowal of his statement by his superiors in the Administration. A White House spokesman declined comment other than to observe that the OMB head "was expressing a private opinion, probably not shared by the President."

Since when does a public official have license to a personal opinion, especially one so insulting and unfair, while appearing as a representative of the Administration before a committee of the U.S. Senate? Mr. Stockman's comments were not the result of goading by a hostile panel of senators but were delivered in a deliberate, let-me-be-perfectly-clear manner that gave ample evidence that they were meant to be taken seriously.

While he has since said he feels that a generous military retirement system is justified, Mr. Reagan should quickly and unequivocally repudiate this slur on the men and women of whom he is Commander in Chief. Moreover, Mr. Stockman should apologize, and if he won't do it, someone in the Administration with a better sense of where the military person's priorities are should do it for him.

LJB□

Continued from Page 14

Another recent trend accelerated in the proposed budget is the transfer of more missions—including some of the most urgent postmobilization ones—to the reserve components and the consequent increase in their strength. The Army National Guard is slated to add 12,113 spaces, for an end-fiscal 1986 strength of 450,496, while the Army Reserve would reach 300,527 with an additional 14,881 members.

Related to the expanded missions of the reserve components is another big (45 percent) boost in full-time manning—active Guardsmen and Reservists who handle the day-to-day logistical, administrative and maintenance work of their units. The active strength of the Army National Guard would rise to 30,679 by the end of fiscal 1986, while full-time Reservists would total 14,714. This amounts to 6.8 percent and 4.9 percent of each component, respectively, compared to 4.7 and 3.7 percent in the current fiscal year. There is some question as to how much farther Congress will be willing to go in the direction of full-time manning, before the practice begins to perceptibly erode the relative cost advantage of reserve manpower.

On a per capita basis, the active Army soldier is about 3.7 times as expensive as its reserve components counterpart, but on the same basis, Army National Guard personnel costs would rise about 14.8 percent in fiscal 1986, and the Army Reserve about 8.8 percent, compared to 4.5 percent for the active Army. Also, while full-time Guardsmen are counted under the active Army's strength ceiling, the active Reservists are not, thus providing the active force with some manpower, albeit of limited function, that is not, so to speak, on the books.

The shape of the new budget shows that the Army's machines-for-manpower bargain is now yielding cost-effective results. Real growth in the procurement accounts would be only 5.2 percent, far less than in the past four years, but the level is sufficient to sustain production of major systems at economic rates; unit costs are now beginning to drop dramatically as the development costs and fixed overhead are diluted and the economies of scale begin to take hold.

Production of M1 tanks would be continued at the rate of 70 a month established by Congress for fiscal 1985, but with the spare parts, training devices and other items needed to actually put the vehicles in the field, something Congress overlooked when it increased this year's authorization.

The new AH-64A Apache attack helicopter, which is going into service now, continues at a steady pace (144 a year), while conversions of older OH-58 helicopters to the advanced OH-58D scout model would rise from 44 this year to 56. Procurement of the remanufactured CH-47D medium cargo helicopters also continues at the established rate of 48 a year. The number of UH-60A utility helicopters falls from 86 to 79, but the Army plans to buy another 18 of the EH-60A "Quick Fix II" electronic warfare version, which uses the same airframe.



The new budget would restore procurement of the ubiquitous and vital TOW 2 antitank missile to 20,100 units, somewhat above the rate prevailing before fiscal 1985's 50-percent cut. Healthy increases are also programmed for the Stinger and Patriot air-defense missiles, the Hellfire heliborne antitank missile and the multiple-launch rocket system (MLRS). The Chaparral air-defense missile system is also being put back into production in an improved version to arm the air-defense brigades that will be formed to protect air bases and depots in the rear zones of NATO Europe.

Other significant items in the fiscal 1986 Army procurement budget include: an increase to 716 M2/M3 Bradley fighting vehicles; continued conversion of older M60-series tanks to armored vehicle-launched bridges and the updated M60A-3TTS version; an increase to 187 of the new field artillery; ammunition support vehicles that work with 155-mm artillery; continued procurement (the number is classified) of the Pershing II nuclear missile; 770 ten-ton trucks needed for support of Pershing II, Patriot and MLRS; 2,179 five-ton trucks to fill current unit shortages and support new weapons systems now being fielded; ammunition for 105-mm tank guns, which is critically short, and 155-mm artillery pieces, including the oft denied binary chemical round; 13,383 M998-series 1¼-ton all-wheel-drive trucks, which will be the principal means of transport in the new light infantry divisions; four divisions' worth of the new SINCGARS (single-channel ground-air radio system) tactical radios; enough of the new MSE (mobile subscriber equipment) communications systems to equip two divisions and a corps signal battalion; multiyear procurement of the M9 armored combat earthmover; and the first procurement of the long-developing RPV (remotely piloted vehicle) drone aircraft, to provide early capability for some overseas units.

For the first year in the last several, Army research and development (R&D) activities show substantial real growth (16.9 percent). That portion of the proposed $5.28 billion R&D budget that develops weapons and equipment for the field forces shows an even greater increase and now amounts to about 45 percent of the total, compared to 41 percent just two years ago.

This reflects both the Army's reduced budgetary role in the joint strategic defense initiative (SDI) and the fact that several major programs are moving into advanced development. Funding would just about double, for instance, for development of the advanced antitank weapon system (AATWS), the LHX family of light helicopters and the joint tactical missile system (JTACMS), intended for precision attack of armored forces at long ranges. ECL□

This Month's Cover



Pvt.2 Harry Shumaker (left), of Mystic, Conn., and Pvt.2 Richard Nautel, of Canton, N.Y., dig into their MRE (meal-ready-to-eat) packets during a break in the Reforger 85 exercise. Both are members of Co. C, 1st Battalion, 12th Brigade, 4th Infantry Division (Mech), Ft. Carson, Colo. A photo story on Reforger 85, the first winter Reforger since 1979, appears on Pages 34–37. *(U.S. Army photograph by Sp.4 Jane E. Rackley)*

USO Needs Yours

Pictures, Anyone?

Do you have a photograph that shows the human side of service in the U.S. armed forces over the past 45 years—something with emotional impact that sums up what it was like to be in a combat zone or somewhere else far from home?

If so, the United Services Organization (USO) would very much like to borrow it to help illustrate a commemorative picture book which is scheduled for publication in the fall of this year as a highlight of the USO's 45th anniversary celebration.

Pictures submitted may be in color or black and white of any size. Clarity and good condition are desirable, but prime consideration will be given to content and impact. The editors are in special need of photographs from the Korean and Vietnam war eras, and also are looking for shots of USO activities in the field and on post.

The deadline for photos is 30 March 1985. They may be sent to Pat Elgin, USO World Headquarters, 601 Indiana Ave., N.W., Washington, D.C. 20004. Queries: (202)783-8121, Ext. 6744. All photos submitted will be returned to the senders.

Criticisms of Combat Models Cite Unreliability of Results

By Col. T. N. Dupuy
U.S. Army, retired

The senior decision makers of the U.S. military establishment are increasingly basing their decisions on the outputs of computer models and simulations of combat which are widely recognized to be unreliable and unrealistic. This state of affairs was particularly well depicted in an article in ARMY in January 1984, "In Pursuit of the Essence of War." Only hinted at in the article, however, is the ultimate implication of this state of affairs: the lives of our military men and women and the survival of the nation are at risk.

I am not the first to point out the unreliability of the Army's models, or how this unreliability is perpetuated by a system of analysis, research and model-building that is essentially incestuous. It is, unfortunately, an analysis system untypical of other, usually scientific, operations research methodologies.

For years I have been trying to attract attention in a number of papers, articles and books to what I believe to be a grave threat to our national security. My observations are discounted, however, because I am known as an historian, and—despite widespread lip service to the importance of military history—a large proportion of operations research analysts and decision makers in the defense establishment tend to be contemptuous of "historical" data.

(It will perhaps be recalled that when the cost overrun revelations of Franklin Spinney became public early in 1983, they were dismissed by high Department of Defense officials as being irrelevant because they were merely historical.)

The criticisms contained in the following list of published papers cannot be dismissed by the word "historical." None of the authors is an historian. With the exception of the U.S. comptroller-general and of German Gen. Franz Uhle-Wettler, all are experienced, respected operations research analysts:

McQuie, Robert. "Military History; a Mathematical Analysis," *Military Review*, May 1970.

Honig, John, *et al. Report of the Army Models Committee*, 1971. Official U.S. Army Report.

Stockfisch, J. A. *Models, Data, and War: A Critique of the Study of Conventional Forces*, March 1975. Rand Report.

Uhle-Wettler, Franz. "Computer Supported Studies and Military Experience," *Soldat und Technik*, April 1975 (1982 translation).

Low, Lawrence J. *Theater-Level Gaming and Analysis Workshop for Force Planning*, September 1977. (Report to Office of Naval Research, published 1980.)

McEnany, Brian R. "Uncertainties and Inadequacies in Theater Level Combat Analysis"; paper delivered at 16th U.S. Army Operations Research Symposium, 12–14 October, 1977.

Hardison, David C., *et al. Review of Army Analysis*, April 1979. Official U.S. Army Report.

Comptroller General of the U.S. *Report to the Congress: Models, Data and War: A Critique of the Foundation for Defense Analysis*, 1980.

Wood, J. P. P. "Very Grave Suspicion," *Royal United Services Institute Journal*, March 1982.

Anonymous. "In Pursuit of the Essence of War," ARMY, January 1984.

In all ten of these documents, there is one common thread: models in use today (and over the past 15 years) do not provide results that are either reliable, believable or consistent. An excerpt from the official Army report issued in 1979, *Review of Army Analysis*, summarizes the major criticisms in these papers:

> Perceived Analysis Methodology Weaknesses:
>
> (b) Uses overly complex—opaque—tools.
>
> (d) Too little use of history.
>
> (f) Model anarchy.

Although the problems have been clearly perceived for more than a dozen years, either the reasons for the problems have not been discovered or too little effort has been made to deal with them, or possibly both.

High in the litany of faults in modern combat models presented in Mr. Stockfisch's paper is the manner in which model designers tend to ignore real world experience in their unscientific design of the models. He writes:

> The image of scientific activity—an image that depicts theories and models as being independently tested by experiment or appeal to experience, with the empirical work in turn casting up new insight that contributes to theoretical advance—does not seem to prevail in the military establishment. One aspect of this situation is that the unverified findings of modeling conducted by one organization can be taken as fact by another organization and used as inputs for the latter's model.

The General Accounting Office report is similarly critical of these same model deficiencies. Both, like most of the other critics, point out the lack of validation of the models.

A report recently came to my attention on a study done for the Army Research Institute for the Behavioral and Social Sciences (ARI). The research, entitled "Human Factors Representations for Combat Models," is presented in an ARI technical report. The study was prepared by two highly respected scholars from one of the best-known and most respected think tanks in the United States.

I see no need for mentioning the names of the authors or of their institution (although obviously anyone who wants to know can find out quite easily), because my quarrel is not with the study's authors nor their organization, and it is not with ARI. It would be unfair to single out for criticism these people or organizations, since the research work discussed here is typical of that done by many fine scholars from respectable institutions for government agencies truly dedicated to the support of national objectives. They are trapped by the analysis system related to combat models which Mr. Stockfisch castigates.

The research process in the ARI report involved four steps or tasks. First, nine models now in use in the defense research community were examined to see how human factors were represented in each. This examination identified 15 model processes, "each comprising three to 12 phenomena involving human factors" for a total of 112 phenomena or "combat processes."

It should be noted that the report gives no indication that any attempt was made to relate these model-derived phenomena or factors to what has happened on a real battlefield.

Any relationship between actual combat and the list of phenomena presumably describing human performance in combat is purely accidental, and totally dependent on the imagination and experience, or lack thereof, of the people who conceived and designed nine models.

Second, "these processes and phenomena [were organized] into a structured typology of human factors areas (that is identify related tasks and their behavioral components)." In other words, the list was classified into 18 categories, each category being called a "task cluster."

Each task and task cluster was then analyzed in relation to a standard, and presumably authoritative, list of 37 human abilities. An impressive pattern of cross-relationships between the 112 tasks and the 37 abilities was then produced. But what does this tell us? While the list of 37 abilities seems reasonable, we can have no confidence in the list of tasks since there is no link between them and battlefield experience.

Third, a sensitivity analysis was performed to determine if there were significant changes in model combat outcome

is a result of changes in assumptions related to any of the human factors represented in the models. The report is a bit vague about how this was done.

While we are led at the outset of the report to understand that the list of processes was derived from an examination of nine models, it would seem that the sensitivity analyses were done with only two models. In any event, this process led to the production of further impressive relative rankings among the list of tasks and task clusters, and the list of abilities.

The sensitivity analysis might be significant, *if* we could be confident that the model inputs were realistic. For reasons noted above, however, there can be no such confidence, so it does not matter if the analyses of factors derived from nine models were fudged by using only two models.

Furthermore, whether the test was performed with two or nine models, the procedure flouts generally accepted principles of scientific rigor. The scientific method demands that results derived with one set of data be tested with an entirely independent body of data. Obviously,

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The fourth and final step was to "use the information generated in tasks one, two and three to structure a framework for conducting human factors research designed to improve human factors representations for combat models and to identify relevant high-priority research efforts." Before commenting on this final step in the research, I would like to go back to the brief foreword of the report. In the first two sentences, the rationale for the study is stated compellingly by an ARI official:

> Although human beings fight wars, human factors are not well represented in simulations of combined arms combat. This is due to a lack of knowledge of the specific effects of human factors on battle processes.

So far so good. No one could quarrel with this as the basis for research, but study has done to rectify this situation:

> This report identifies high-priority behavioral science areas for research on such simulations. The report makes explicit the presently implicit assumptions related to human factors and provides a structure within which to relate characteristics of human behavior to characteristics of combat modeling. Such a structure provides a framework that individual research projects should build on to improve combat simulations used by the Army.

There is nothing in the study report that provides the slightest assurance that the "high priority behavioral science areas for research" are, in fact, related in any way to human performance on the battlefield. Every one of them is based on someone's opinion that such factors may have affected combat outcomes. (In the light of the sorry state of the documentation of our models, we will probably never know who that "someone" was in most instances.)

We have no way of knowing, however, that these are the real factors; the report offers not the slightest insight on this, merely uncritically distilling factors from models apparently untainted by reality. Even if these are real combat-related human factors, we have no way of knowing if these comprise all the factors, or even the most important factors, without a rigorous determination of how these factors are truly represented in combat experience.

The author of the foreword rightly asserts that "human factors are not well represented in simulations of combined arms combat." ARI is apparently willing to accept these flawed simulations, with which it is admittedly dissatisfied, as the sole data basis for a study on representing human factors in combat. The report then makes explicit presently implicit assumptions that have already been condemned by ARI as being poor and requiring improvement.

On this research, performed only with models that we are told are unsatisfactory in representing human factors, is erected a framework which is intended to be used to improve combat simulations. What kind of a framework can be built from materials already known to be unsatisfactory? How can we manipulate something of poor quality and suddenly produce from this something of high quality?

The ARI official seems to have forgotten the first law of computers: garbage in, garbage out. But there is a terrible potential consequence of this truly incestuous process. Because of this highly touted research, sponsored by ARI, future planners, operations research analysts and decision makers will assume that our "improved" models are now reliable in the way they represent human factors. It



"I'm sorry, but the general can't answer the phone right now. He's busy thinking the unthinkable."

is dismaying to contemplate the possible consequences of serious planning on the basis of such flawed planning tools.

When I started to write this article, I tentatively entitled it "Sex and Models," because it dealt not only with incest, but also with perversion and indecent exposure. However, wiser minds prevailed upon me to change the title to one that was more sober and suitable to its subject matter.

There was some relevance to the old title, however. I have discussed the incestuous process involved in the system in general, and this ARI study in particular. For perversion, look again at what Mr. Stockfisch says about the scientific method and about the misuse of unverified facts. Then look at the research structure of the ARI report. Is this not science perverted?

As to indecent exposure, to be aware, one need only look at the system here revealed (between the slightly parted fingers shielding our eyes, of course). The emperor has no clothes! □

COL. T. N. DUPUY, U.S. Army, retired, is a writer on military subjects and the president of T. N. Dupuy Associates and executive director of its subsidiary, HERO (Historical Evaluation and Research Organization), located in Dunn Loring, Va.

Self-interested Management Abounds

Strengthening Leadership Ethic

By Col. Irwin M. Jacobs
U.S. Army, retired

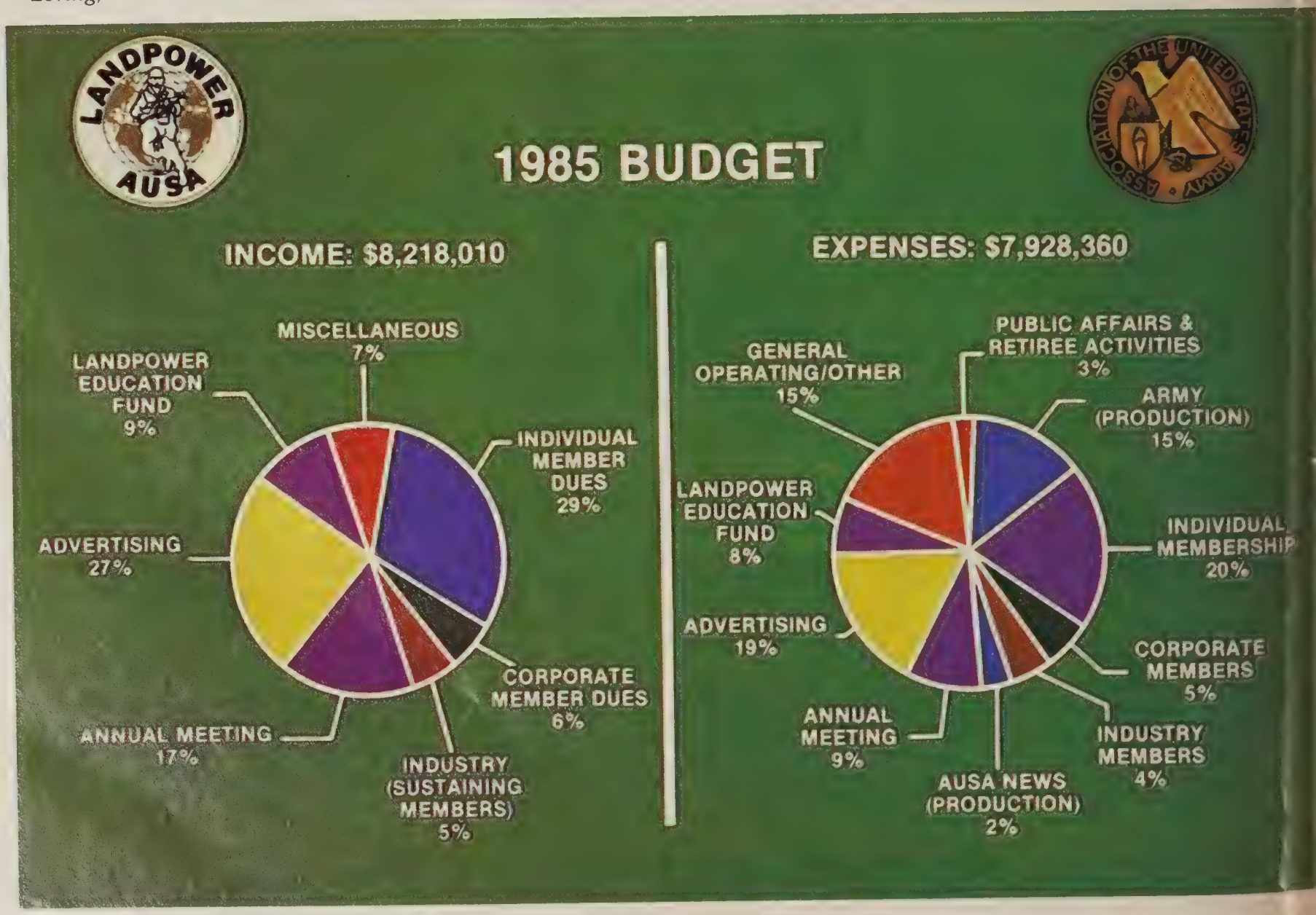


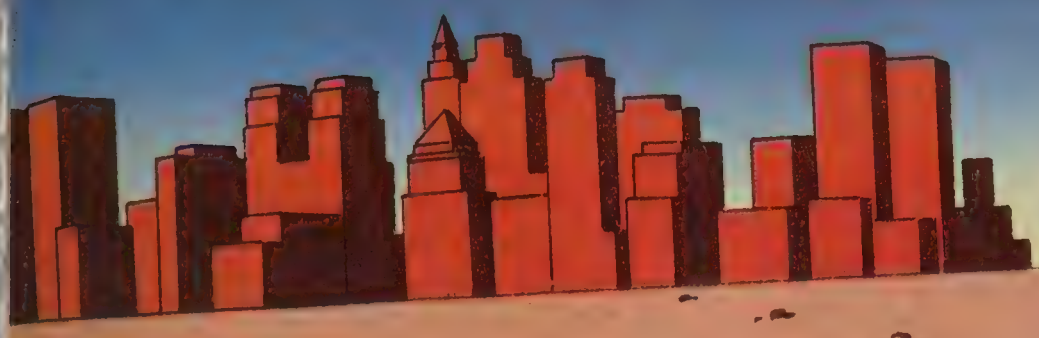
I have just read for the third time Capt. (then-1st Lt.) Ralph Peters's article "Leaders and Managers: Rewards Out of Balance" (August 1984). The article was perceptive and to the point, and demonstrative of a wisdom that belies Capt. Peters's relatively short commissioned service. I suspect, too, that his equal length of enlisted experience gives him a perspective that allows him to see his subject in even clearer focus.

I have read a spate of articles recently, like Capt. Peters's, that bemoan the sinking of the Army's leadership ethic into the morass of management. This theme was exemplified not too long ago during a series of discussions I had with a number of junior officers, among them several company commanders and staff officers in combat units in active Army divisions. (The nature of my civilian work keeps me in touch with the Army.)

The experiences and observations they related to me about their senior leadership make me question seriously the manner in which Army officers today are being prepared for battalion, brigade and, ultimately, higher level commands. Here are just a few examples of the officers' collective impressions and perceptions of their own chains of command:

- Company commanders who are required to attend as many as three meetings a day at the battalion or higher level.
- A brigade commander who does not communicate with his company commanders except at social functions, and who does not visit his companies for up to four or five months at a time.
- A battalion commander who imposes on his subordinate commanders as they execute their company Army training and evaluation programs.
- A battalion commander who habitually communicates with his company commanders through staff officers or head





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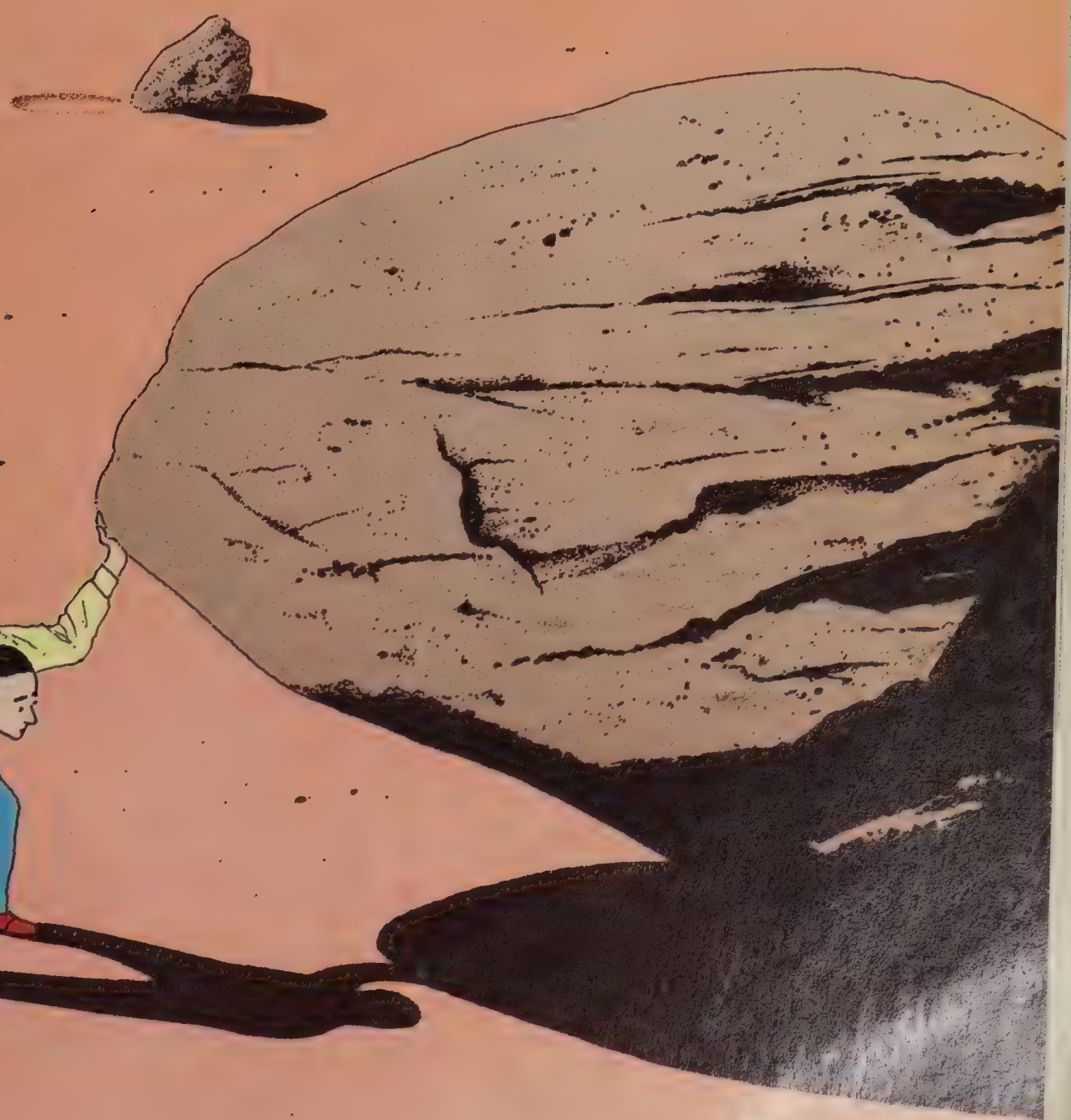
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quarters enlisted personnel, and who is a stranger to his own troops.

- A battalion commander who chooses to have his company commanders "reply by endorsement" for minor administrative oversights rather than by discussing them in person.
- A newly "frocked" commander who initiated wholesale, disruptive changes in his well-functioning battalion within a week of assuming command, without consulting his subordinate commanders.
- A battalion commander who consistently fails to understand the time implications of troop leading procedure during the execution of tactical operations.
- Battalion and brigade commanders who do not countenance mistakes as part of the learning process; do not know how to counsel their subordinate officers; focus on the negative to the exclusion of the positive; are reluctant to entrust their subordinates with a degree of responsibility commensurate with their rank and position; direct their energies toward making themselves look good in the eyes of their superiors, and all the "management manipulation" that implies, instead of toward leading their units.

My initial reaction to these observations was that they described isolated incidents and, perhaps in some respects, reflected "sour grapes." Certain facts belied this conclusion, however: the observations were uniform; they were independent; they were made by honest officers who are perceptive and inquisitive, as is characteristic of their generation.

Is this phenomenon of rhetorical leadership and self-interested management, as Capt. Peters describes it, endemic to the ranks of our middle-grade officers and colonels? If so, what is the cause of it? Finally, what can be done about it?



I found a clue to the first two questions in an article which appeared last year in a military periodical. The article describes a new Department of the Army policy that places a selection cap—ten percent—on those officers being considered the first time for battalion and brigade command to make sure that officers are promoted to the appropriate grade before they take over such commands. More significant, the article claims that the inclination of past command boards to choose young officers has brought about a decrease in command opportunities for the Army's senior O6s and O5s. The selection cap is a recognition by the Army that, while some younger officers show outstanding potential for battalion and brigade command, and, clearly, some may be ready to assume that responsibility, at least 90 percent of those commands should go to officers whose more extensive experience and measured progression through the ranks make them a more solid choice for command. It is recognized that officers destined for battalion and brigade command should receive the maximum amount of seasoning and reach professional maturity before being entrusted with that important responsibility.

The answer to the third question is easy in theory but difficult to put into practice. It requires a commitment on the part of the Army's leadership to ensure that those officers selected for battalion and brigade command have had sufficient experience, training and responsibility, tempered by the right kinds of assignments, to do the job. It means getting our junior officers back to the basics of leadership, so that when they reach the heights of mid-level and senior command they will not only know how to manage resources and apply data, but how to lead people as well. It means that they must:

- Be masters of their craft, technically and tactically.
- Appreciate the importance of time as a precious resource.
- Apply the positive as well as the negative elements of discipline.
- Assign responsibilities and tasks to their subordinate leaders, and then give them the opportunity and authority to perform them; this includes a tolerance for mistakes, as well as the will to discipline them when they do not perform well.
- Focus on accomplishing the mission; if the battalion or brigade is run well, the commander will look good regardless. The officer who is interested only in himself has no business being in command.

Above all, the Army must teach junior officers to be sensitive to human nature, which includes the ability to communicate with their subordinates; when they reach the level of battalion and brigade command, this skill should be second nature. I am convinced that the inability to communicate one-on-one breeds many of the ills and deficiencies in prospective leaders, to include the inability to pass information, to give and receive criticism, to reward, counsel, guide, train and direct. In short, it inhibits the ability to interact with others, which is the core of leadership.

When I was a junior officer, I looked at the questionable actions of some of my superiors and made mental notes to myself not to repeat them when I was in a position of influence and authority. I would like to think that I learned from those observations and did not make the same mistakes. Now some of our junior leaders are making the same notes. Have we come full cycle? □

COL. IRWIN M. JACOBS, U.S. Army, retired, served 21 years of active duty as G3 of the 2nd Infantry Division in Korea, as a battalion commander in the 101st Airborne Division (Air Assault), on the faculty of the Army Command and General Staff College and on the Department of the Army staff.

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By Lt. Col. L. D. Holder

May Be Most Important Doctrine Change Since World War II

A New Day for Operationa



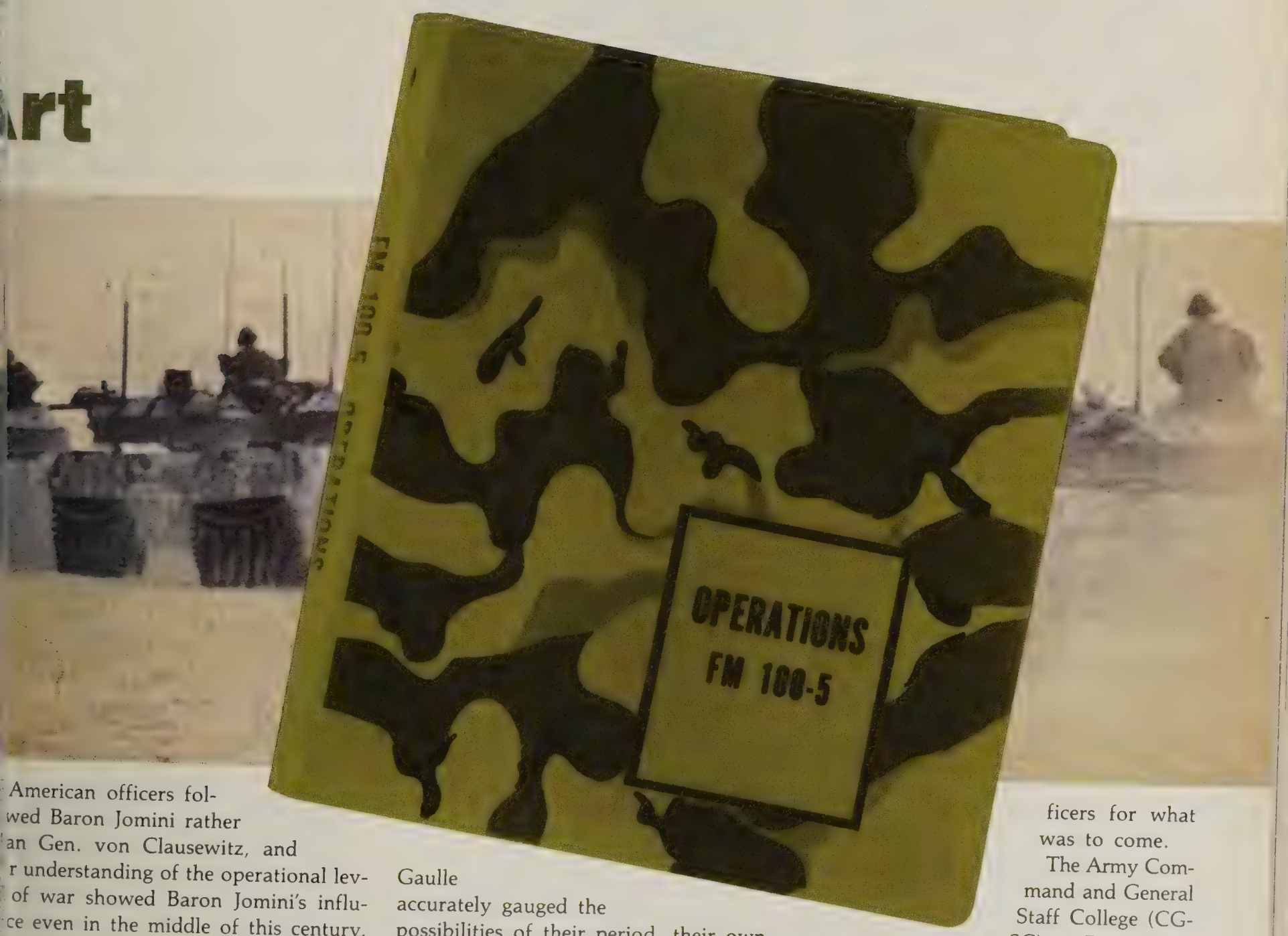
Three years ago the Army substantially revised its doctrine. *FM 100-5, Operations,* contained some significant changes and a few of these, chiefly deep attack and maneuver-based tactics, stimulated a great deal of debate. Yet a less noted change, the addition of the operational level of war as a separate field of military activity, has generated relatively little discussion although it certainly represents a distinct departure from the familiar. In fact, the adoption of operational art may be the most important change in Army doctrine since World War II. The Army's response to it might well determine the force's success in the next war.

If that change is to amount to more than a few lines in a field manual, however, Army leaders will have to make some fairly drastic changes in their present views. Senior officers will have to master an important subject that has been neglected for a generation and educate their juniors as they teach themselves. They will all have to overcome an entrenched habit of thinking solely in tactical terms. In short, Army officers will have to recover some 30 years of lost ground to catch up with their rivals. That they will have to do so without benefit of any experience in the subject from anyone now in uniform only makes the job tougher.

While operational art gives military historians insights into even the earliest campaigns, its roots as a field of study go back no farther than the days of Napoleon Bonaparte. In analyzing the emperor's unprecedented success, Gen. Karl von Clausewitz and Baron Henri Jomini both discerned a difference between his actions in battle and those that preceded and followed it. They believed that the designing of campaigns, the concentration of large forces before battle and the techniques of exploiting tactical success differed enough from the conduct of battles to merit separate consideration.

By the close of the nineteenth century, a number of military writers accepted this distinction as useful even if they did not agree on terms. What some called "grand tactics," others referred to as "military strategy" and still others, as "operations." The Prussian War College, following Gen. von Clausewitz and reinforced by Count Helmuth von Moltke, made the most systematic studies of the subject and integrated it smoothly into doctrine.

In the generation following the war, the Army allowed its hard-won practical experience in handling large forces to atrophy, introducing a tactical bias in equipment, organization and training that is only now being countered with a renewed understanding of the vital link between grand strategy and minor tactics.



American officers followed Baron Jomini rather than Gen. von Clausewitz, and their understanding of the operational level of war showed Baron Jomini's influence even in the middle of this century. That is not to say that American theory ever really excelled at that level, however. Gen. Ulysses S. Grant, who came by operational skills strictly through experience, commented acidly on the book-learned "strategy" of his day. In later years, American isolation and the absence of a concrete threat militated against the formulation of a strong operational theo-

Only the Germans and, later, the Russians made a success of operational studies. While British Maj. Gen. J. F. C. Fuller, B. H. Liddell Hart and Gen. Charles de Gaulle accurately gauged the possibilities of their period, their own armies failed to recognize their foresight. The men who built functional operational systems in the early twentieth century were soldiers of Germany and the Soviet Union who referred to Gen. von Clausewitz through Mikhail Tukhachevskiy, Hans von Seeckt, Count Alfred von Schlieffen and Count von Moltke.

The U.S. Army of the period also recognized the operational level of war as a field of study. Although that understanding was imperfect, instruction at Army schools in "military strategy" during the 1920s and 1930s partially prepared officers for what was to come.

The Army Command and General Staff College (CGSC) at Ft. Leavenworth, Kan., approached motorization, armor and aviation rather tentatively and offered no clear vision of the future. It did, however, ground American officers in the basics of large unit operations, teaching them to think in terms of theaters, strategic objectives, lines and bases of operations, long-range reconnaissance and movement, and the differences between open and static warfare.

American leaders worked without a standardized operational concept such as *blitzkrieg* and built an Army with no overarching vision in mind. Then as now,

however, U.S. soldiers had to prepare for operations under a wider range of conditions than their European counterparts, and their understanding was good enough to permit them to stage large operations in several different theaters with consistent success.

For all practical purposes, the study of operations ended in the U.S. Army after World War II. Perhaps the belief that nuclear weapons meant the end of conventional land warfare was to blame, but, whatever the cause, the knowledge of large unit operations declined continually even with the object lesson of Korea before us.

For years, the pool of experienced officers from World War II made up for this deficiency. Now, however, in the absence of such experience and of adequate study we have become an army of amateurs in one of the most critical military subjects. As one critic noted, we have not only refused to say the term "operational art," we have refused to think about it.

Formally distinguishing operational art from tactics is far more than a semantical exercise. It holds great potential for good if only because it stakes out the ground in a way that will not let us run large and small unit operations together easily or wholly neglect either one.

Army doctrine of 1982 defined the operational level of war as the activity concerned with using available military resources to attain strategic ends in a theater of war. As the link between strategy and tactics, it governs the way we design operations to meet strategic ends and the way we actually conduct campaigns.

The subject, therefore, differs clearly from tactics in its scope and perspective. As the discipline dealing with theater forces and campaigns, it encompasses larger geographical areas and longer spans of time than tactics does. Because of the nature of war today, it is inescapably a joint activity when applied to land warfare.

At its "upper" end, where it connects with strategy, operational art is truly a military art—the fitting of means to the tasks at hand, the analysis of complex situations and the designation of military objectives which, when secured, will fulfill the needs of strategy. At its "lower" end, operational art addresses the ways in which campaigns are designed and pursued in a theater—determining when and where to fight, disposing forces in anticipation of battle and acting to get the greatest advantage of tactical actions whether or not fighting takes place.



The Bettmann Archive

Baron Henri Jomini

A number of the concepts of older U.S. doctrine and of classic theory need to be reviewed as Army planners flesh out the framework of the 1982 *Operations* manual. The ideas that still seem to apply are discussed here. They include the once familiar notions of centers of gravity, culminating points, open and static warfare, "branches" of operational plans and sequels. All these need to be updated, but each appears to retain some utility. Similarly, battles, campaigns and major operations must be reconsidered from the operational perspective.

The form for operational planning in peace is well established and a process exists for providing initial guidance and updating plans once they have been written. Process does not guarantee content, however, and the substance behind the form is unfamiliar to too many Army officers.

Operational planning is somewhat more complex than planning for tactical actions. The standard planning process can be used and some of the established guides to analysis such as the estimate of the situation and the principles of war retain their utility in operational planning. Unlike anything else, however, operational planning involves bridging the gap between strategic and political aims and actual military measures. It also requires a unique flexibility in determining when and where to fight, how to exploit tactical actions, and how to coordinate a wide range of military and nonmilitary actions in pursuit of the theater objective.

The need for central direction and full harmony with strategic ends means that the theater commander must lay out a unified operational plan. His theater campaign plan must conform to strategic requirements and provide guidance to ground, air and sea forces in a clear, effective concept of operations. In most cases the operational plan will also have to win the approval of a coalition rather than a single national authority.

Initial guidance to the theater commander should allocate forces to him, define the logistical support available, identify the enemy and impose time or space requirements on the operation. This initial guidance should also state the restrictions that will affect his operations.



The Bettmann Archive

Gen. Karl von Clausewitz

The use of nuclear weapons, the unop- posed surrender of specified territory o cities, the avoidance of certain nations territories and constraints on aerial bomb ing typify the curbs that have been pu on operations for political or strategic rea sons. Given this much and a clear state ment of the strategic purpose, the theate commander can translate his orders int an operational plan.

LT. COL. L. D. HOLDER, an Advanced Operational Studies Fellow of the Army War College, earned a master's degree from Harvard University and taught at the U.S. Military Academy and the Command and General Staff College. One of the principal authors of the current FM 100-5, Operations, *he commanded cavalry units in Germany, Vietnam and the United States.*

He must decide first *how* the enemy is to be defeated. This fundamental decision leads to the selection of military objectives which, when attained, will actually secure the strategic end. This selection of objectives is vital. If it seems too basic to mention, consider the Army's confusion on this score in Vietnam or recall the temporary loss of direction after the Chinese intervention in Korea.

Theater commanders can choose from a number of options for defeating an enemy, but they must understand their environment and the political situation as well as they do the strategic context of operations. Every situation will be different and false assumptions about what will win can lead to bloody, inconclusive fighting.

The objectives chosen should, therefore, be attainable with the forces at hand, achievable in a reasonable amount of time and, for military as well as humanitarian reasons, obtainable at the smallest possible cost in lives and material. Because a protracted war rarely serves strategic ends well and punishes the force unnecessarily, the operational plan should aim for the greatest possible speed of decision.

An effective plan focuses on what Karl von Clausewitz called the enemy's centers of gravity. That is, it seeks objectives whose attainment makes the enemy's position untenable either in the entire theater or in a significant part of it.

The concept of centers of gravity assists planners in concentrating on narrow, well-defined objectives, but it does not solve the problem of discovering what those centers actually are. They may be straightforward terrain or force objectives such as the control of an industrial region or of a capital city or the defeat of a large opposing formation.

They are just as apt to be "soft" nongeographical aims, though, like physical security or loyalty of a population. While military measures will always be required, the accompanying civil–military and psychological actions may be decisive in low-intensity conflicts.

Once the operational commander has decided on an objective, he must formulate his concept of operations. As in tactical planning he must consider every aspect of the situation, but at the operational level these considerations tend to be broader. Mission, for example, is stated in general terms and usually requires accomplishment by stages rather than through a single operation.

The personalities, strengths, weaknesses and operational styles of leaders on both sides influence the course of operations markedly and take on great importance in operational planning. Similarly, national differences in doctrine, equipment, organization and general abilities bear close study in designing a campaign plan.

Separating allies physically or by concentrating operations on one of them has been a common feature of many campaigns. The Soviet practice of focusing operations against the weaker allies of the Germans is one example of how national differences can be exploited.

Differences in mobility, firepower, morale, aptitude for certain operations or environments and willingness to cooperate with troops of other nationalities are further points to consider. Commonly, both sides in a conflict will have allies whose assistance is conditional (the U.S. Allied Expeditionary Force of World War I, for example, could only be employed as a unit under U.S. command). All such special conditions offer operational opportunities to opposing commanders.

All forces must also be considered as land–air forces and when the enemy capability for air operations is significant, it must be countered by decisive action early in the campaign. In the 1967 and 1973 Arab–Israeli wars, neutralizing enemy air played a pivotal role in the campaign plans of all combatants.



Annual NATO exercises are some of the only training U.S. commanders and staffs receive in handling theater-level forces: M1 Abrams tanks of the 2nd Armored Division's 3rd Battalion, 67th Armor, on the road in West Germany during the 1984 Lion Heart exercise.



Masters of operational art: then-Lt. Gen. George S. Patton Jr. (left), II U.S. Corps commander, confers with Gen. Dwight D. Eisenhower, Allied Forces commander, on the U.S. offensive in Tunisia, 1943.

The terrain of a theater requires analysis that differs from tactical terrain appreciations. Ports, airfields, road nets, drainage patterns and major physical features such as mountain ranges, desert regions and marsh areas are the centers of such analysis.

Gen. George S. Patton Jr. placed special emphasis on the importance of road networks in operations; he taught his subordinates to fight their tactical actions off the roads, but he recognized the operational necessity of using the roads to concentrate and support his corps. Logistic support is of special importance in large force operations, and operational commanders have repeatedly found themselves much more constrained by logistics than tactical commanders have been.

When the theater is large or force densities low, open warfare, the old form of free-moving corps and armies, may still be practiced. When both sides possess freedom of action, the attacker may seek battle in vain as Napoleon did in 1812 or may decline battle repeatedly as Gen. William T. Sherman did in Georgia during the Civil War.

Defenders can also profit from the conditions of open warfare, but they usually have the greater need to bring on battle if only to stop the attacker. Only rarely can the defender afford to withdraw to great depth. The Russians have suffered through a number of campaigns in the depth of their country and South Korea also survived an extremely deep invasion.

In the desert theaters, defenders have surrendered great vacant spaces as part of their campaigns. Those are exceptional cases, though, and normally such losses of territory are unacceptable. Usually loss of territory forces the defender to fight or lose by default. Gen. Joseph E. Johnston's skillfull opposition to Gen. Sherman, for example, netted nothing for the Confederacy and led to Gen. Johnston's replacement.

In a cramped theater of operations or one where force densities are great, operational freedom of action may be harder to come by. In such circumstances, open warfare takes place only when deep defenses can be penetrated and lasts only until the defender can reconcentrate. Static warfare will normally predominate in such theaters.

The stalemate in France throughout World War I, the campaign in Italy in World War II, and the stationary battles between Iran and Iraq since 1982 illustrate the nature of such operations. The great opportunities for quick operational decisions in such circumstances occur early, just after mobilization, and thereafter wait on tactical success.

While the blitz of 1940 exemplifies the breaking of a potential deadlock, most of the operations of World War II displayed a pattern of alternating static and open warfare. Operations on NATO's central front could take either path. It seems likely that a surprise attack in depth—flawless execution of what is in fact Soviet operational doctrine—would be the only way to avoid a grinding campaign of attrition or a bloody war of movement based on nuclear fires.

Whether attacking or defending, the concept of operations should embody a flexible approach to theater objectives that emphasizes the strengths of the friendly force, accentuates its enemy's weaknesses and recognizes the operational conditions in the theater. Speed, surprise and multiple paths to the objective have characterized the best operational planning. Baron Jomini's old prescription of concentrating the greatest possible strength at the decisive time and place remains a worthwhile goal; the problem of determining where and how is the challenge, as it always has been.

The American experience has not displayed a consistent pattern in campaign design. Its historical tendency toward ponderous, broad front efforts in Europe and Vietnam that risk little and gain correspondingly little has drawn justifiable criticism. Such concepts must be recognized as luxuries available only to forces with great materiel and numerical superiority and in no particular hurry.

We cannot count on those conditions and should therefore stress higher risk, higher payoff planning as we update large unit doctrine and training. The traditions of Lt. Gen. Thomas J. (Stonewall) Jackson, Gens. Sherman and Douglas MacArthur are, after all, as much a part of our history as the less focused campaigns so often censured.

The theater concept envisions the ultimate accomplishment of the operational mission, but except in the smallest theaters it can rarely forecast operations beyond the first tactical decisions. The campaign is therefore divided into phases in most cases.

Subordinate commanders get specific orders for the first phase of a campaign. Beyond that, guidance is rougher. As a minimum, the theater commander's sub-

ordinates should understand his concept, their responsibilities in the first phase, the objectives of the force as a whole and the conditions in which the theater commander will accept battle willingly.

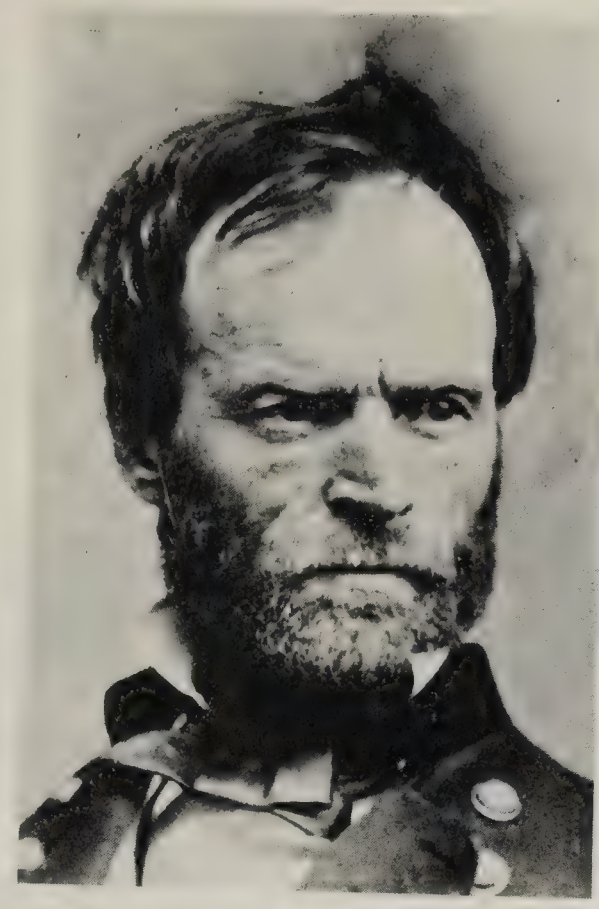
They must also be prepared for the likely variations on the main theme of the concept. Such variations are part of operational art and are inherent in operating against an active enemy. The elder von Moltke described such variations as "branches" from the main plan. In effect, such branches lead to a single end without tying the commander to a single course. They are means of adapting the basic scheme to the specific conditions in the field. A plan with branches permits the commander to fight, decline battle or fight in a different way than he originally intended.

In practice, most successful commanders have used flexible planning to keep their options open before battle, preserving not only freedom of action but also choice between several workable courses of action. Gen. Sherman's Georgia campaign, Gen. Grant's operation south of Vicksburg, Miss., and Gen. Jackson's Valley campaign illustrate the advantages to be gained from preserving freedom to act and keeping the enemy off balance by threatening several actions at once. In each of these operations the commanders set clear objectives but varied their approaches according to changing circumstances.

Another distinguishing feature of operational art is the exploitation of tactical actions to gain campaign objectives. Using the results of battle or maneuver can be as important as battle itself. And just as the plan must contain branches to set tactical action on the best possible terms, so the commander must also anticipate what is likely to follow battle. Such sequels to tactical action may be nothing more than general ideas of what the commander will do next, given a certain outcome. To be most effective, sequels should be outlined and understood in advance. Specific units and directions should be identified for the most likely courses of pursuit, withdrawal or defense if the force is to react promptly to opportunity or danger.

This contingency planning cannot be set, nor can it absorb too much attention before a battle. But to be prepared for success, failure or stalemate such plans should exist, if only in rough form.

One further Clausewitzian notion needs to be recollected in planning at the operational level. That is the idea of culminating points. Basically, a culminating point is reached when a force on the offensive expends so much of its strength that it ceases to hold a significant advantage over the defender.



Gen. William T. Sherman

At that point, the attacker either halts to avoid operating at a disadvantage or goes on and becomes weaker than the defender. By way of example, both Napoleon and Adolf Hitler failed to obtain their operational objectives in Russia before reaching their culminating points, and both went on to overextension and defeat.

In planning operations, a commander on the offensive must anticipate his own culminating point and adopt a plan that secures his goal before he loses his superiority over the defender. Conversely, a defending commander tries to bring the attacker to his culminating point rapidly by doing everything possible to disperse, divert and exhaust the attacker's forces.

Events almost never conform to plans. Once a campaign is under way, its actual course rarely follows expectations. This tendency to change is one of the prime characteristics of all operations; the key to coping with it lies in maintaining a clear objective and in modifying the original plan only to gain a clear advantage.

Gen. Omar N. Bradley's decision to press on toward Brest, France, after the Normandy breakout provides an example of failure to abandon an outmoded plan. His reaction to the opportunity to entrap German forces in the Falaise Pocket illustrates the flexibility that most operations require to be successful.

Essentially, campaigning—conducting the operational movements between tactical actions—is a matter of approximation and constant adjustment. Commanders on each side gauge their enemy's intentions, track his movements and continually modify their own actions based on conditions that arise and pass with movement and time. Campaigning involves maneuver and fire on a very large scale and extensive logistical and intelligence efforts.

In operational maneuver, opposing commanders try to secure favorable terms of battle by obtaining advantages of position or strength. To do so, they shift directions of movement, change dispositions, probe and feint, throw obstacles in the enemy's path, and, at the best opportunity, mass and commit their forces to battle. In open warfare, this may entail movement of the entire force. In static situations, it involves deception, detailed preparations and rapidly concentrating forces just before battle.

During operational maneuver, Napoleon disposed his corps in anticipation of the form of maneuver he intended to use in the coming battle. That idea is still basically sound, but the greater maneuverability of modern forces and their capabilities for long-range surveillance and fires argue for more flexible, less transparent dispositions today.

Operational dispositions, in other words, should not telegraph the commander's intent. The mobility, speed and reconnaissance capabilities now available should be reflected in plans which leave the commander free to adjust his dispositions until just before battle.

Corps and armies move in formations that allow their rapid commitment to combat. Superficially similar to tactical formations, operational groupings are more complex internally and move more slowly. Support units, supply columns, protective batteries and headquarters accompany large unit movements. Airfields, depots, ports and routes have to be opened and secured behind them. Traffic control, air defense, advance reconnaissance and route improvement all play important roles in a large force's movement.

Like their tactical counterparts, operational formations permit the commander to cover ground with the greatest possible speed and security and provide for flexible, effective commitment of forces to combat. The differences, however, are extremely important and operational planners require special training to plan and



Lack of flexibility was evident after the Normandy breakout, as U.S. forces were tied down in an attempt at early capture of Brittany ports: a tank destroyer supports infantry in the port of Brest, September 1944.

supervise the movement of deployed armies and corps.

This sort of training, once common in U.S. military schools, is now entirely missing. Both CGSC and War College students learned to mass and move armies and corps in the 1920s and 1930s as a regular part of their curricula. The CGSC is back into that practice in a limited way, sending a selected group of students to follow a Civil War campaign. Today's War College students visit the Gettysburg battlefield on a day trip; it would be better to put them through the whole course of that campaign, beginning at Fredericksburg, Va., in the roles of opposed army staffs.

Merely moving a large force, say a heavy corps, on a developed road network with good supporting air facilities and adequate supplies requires advanced staff skills. Changing the direction of that corps without losing time, air protection or mutual support between divisions or concentrating it for battle without creating a nuclear target is the next level of difficulty.

Pulling all that together so that every unit's potential can be used and all supporting air and naval forces can be brought to bear in spite of enemy interference is staff work of the highest order. Yet that does not seem to be what our schools teach and it is certainly not what we practice in exercises.

Operational fires became practical with the advent of military aviation and rocketry. The introduction of nuclear weapons, of course, gave great additional impetus to the idea that fires apart from maneuver could have operational significance. Unfortunately, U.S. theorists, influenced by the premature and complete divorce of the Army and the Air Force, thought almost exclusively in terms of the strategic aspects of aviation and missiles. The Soviets, on the other hand, made the connection between long-range fires and operations early and have developed their thought on the subject without interruption.

"Pure" operational fires help set the terms of battle well before opposing forces join for combat. Concentrated against particular areas, facilities or units, they limit the enemy's use of roads, rails, air and waterways; deprive him of supplies, services and transport; and degrade his air forces (and thus his ability to interfere with our own ground and air operations). Operational fires are, in fact, akin to special operations in the way they support the main operation by distracting, weakening, blinding and slowing the enemy.

In combination, operational maneuver and operational fires have been devastating. The cooperation between Gen. Patton's Third Army and Lt. Gen. Elwood R. Quesada's IX Tactical Air Command is a case in point. Movement of the Third Army in exploitation of its tactical success in France made the enemy take to the roads to avoid entrapment. Once on the roads, enemy columns were easy targets for Gen. Quesada's squadrons. The effects of the air campaign in turn prolonged the period of Gen. Patton's operational maneuver.

The battle for air supremacy, then, holds critical importance for theater operations. The Air Force understands this principle clearly and the Israeli Defense Forces have acted on it consistently. Generally, the air campaign requires greater understanding and support from U.S. ground officers on large unit staffs.

Battles are the hard points of campaigns, the resolutions that determine the future course of operations. They have, to borrow a turn of phrase, a language, but not a logic, of their own. The language is tactics and the importance of tactics is not diminished by the adoption of operational art. An old truism runs that a lost battle cancels all the advantages gained by a good operation. The logic behind battles is the design of the campaign; they are fought for a purpose.

Battle does not take place at every stage of operations. By able maneuver, a commander may make his enemy's position so precarious that he must withdraw without fighting. Sun-tzu and Gen. Sherman notwithstanding, though, campaigns are decided by battles in all but the rarest cases. Once forces are in motion, the object of operational art is to bring about battle under the most favorable terms possible, to make the enemy fight at a disadvantage.

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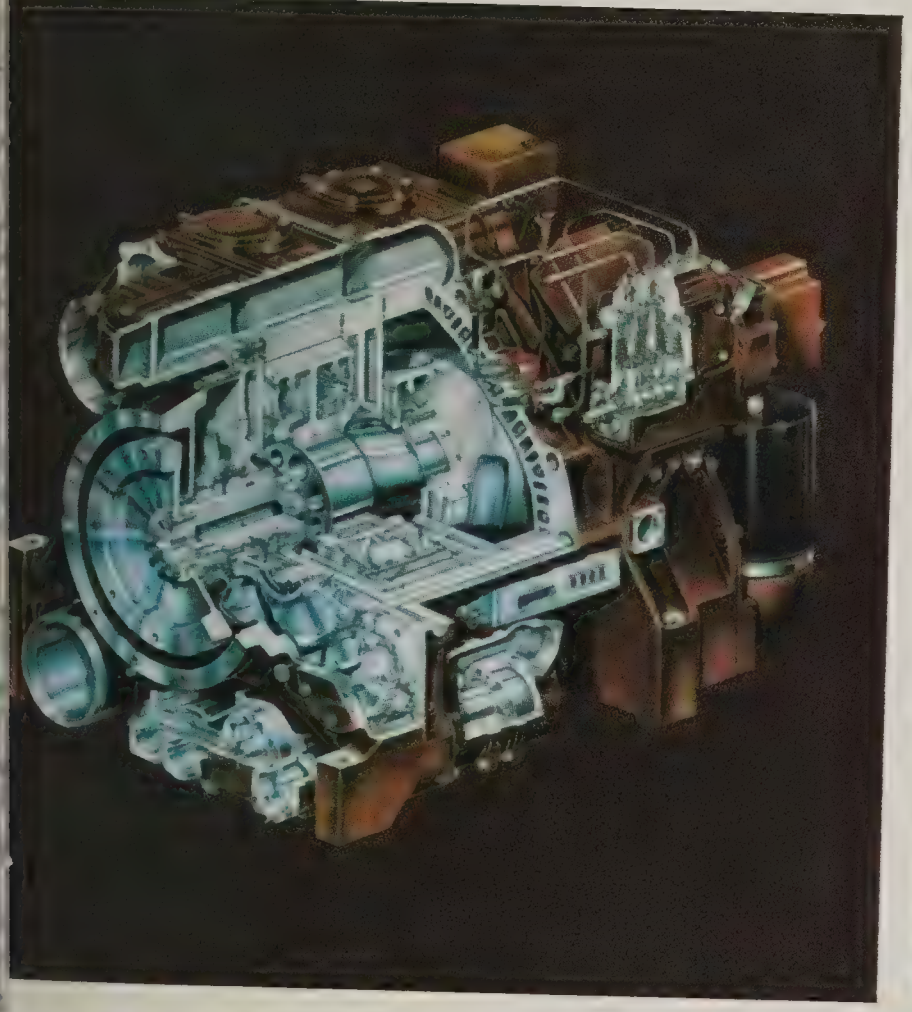
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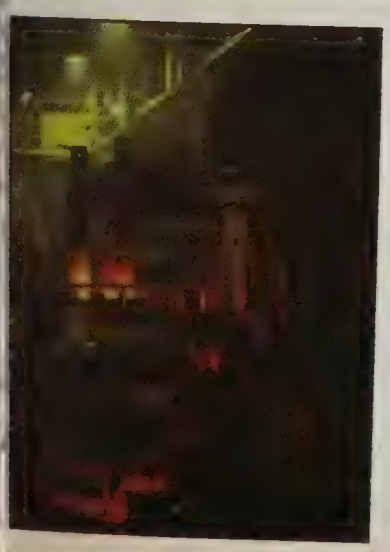
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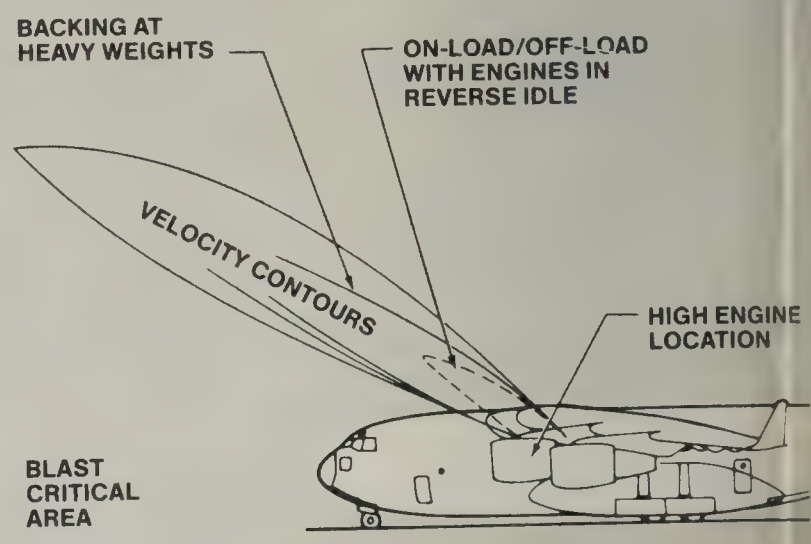
In your automobile, it's an easy maneuver to back into or out of a parking space. The McDonnell Douglas C-17 airlifter performs the same maneuver almost as easily, though it's by no means a small airlifter.

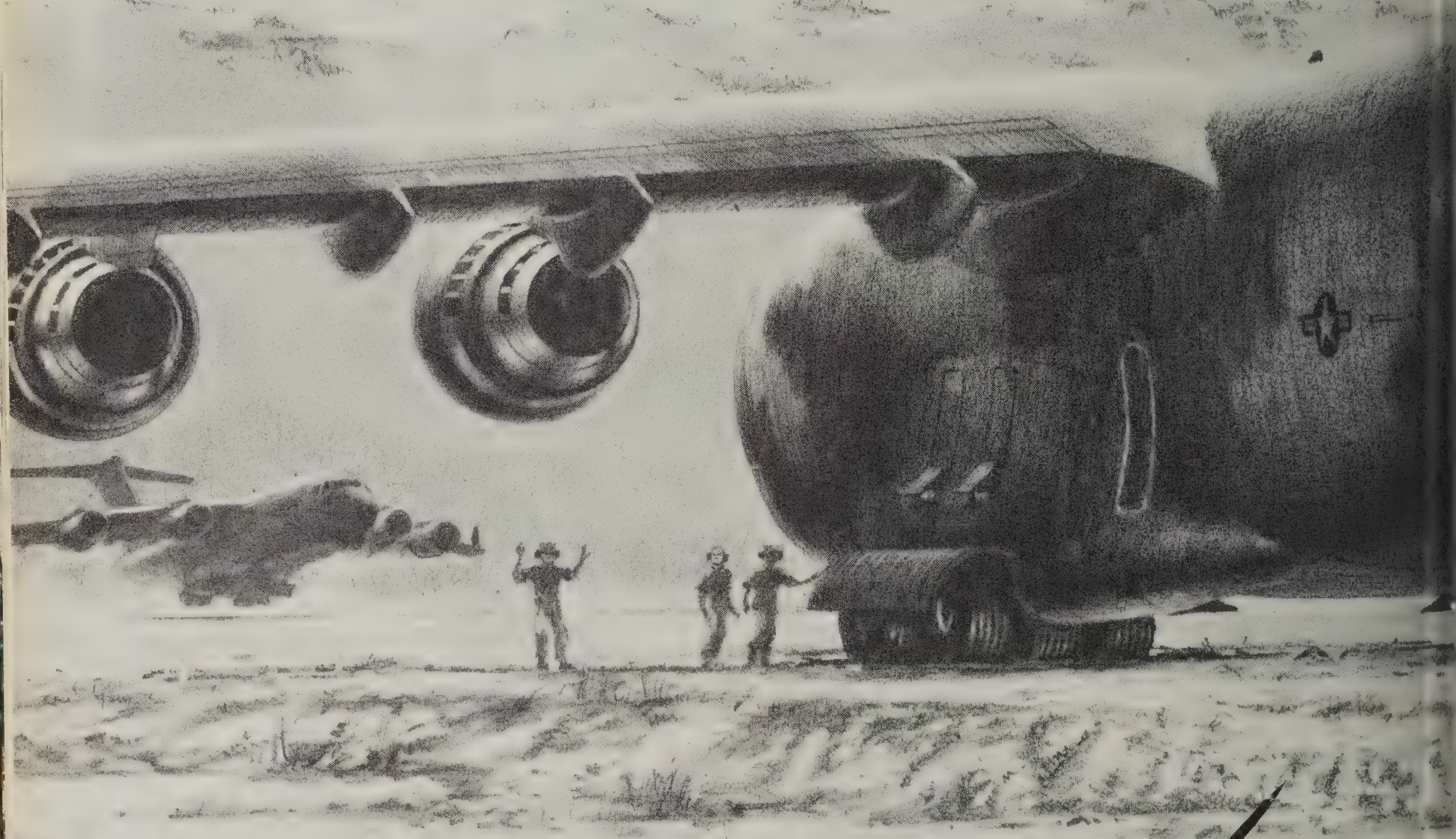
The C-17 can be backed up a two percent slope. It can be turned completely around in just 90 feet. It can be maneuvered into and out of tight spots. It can be unloaded with the engines running with little disruption of ground operations, without risk of injury to personnel, and without blowing debris.

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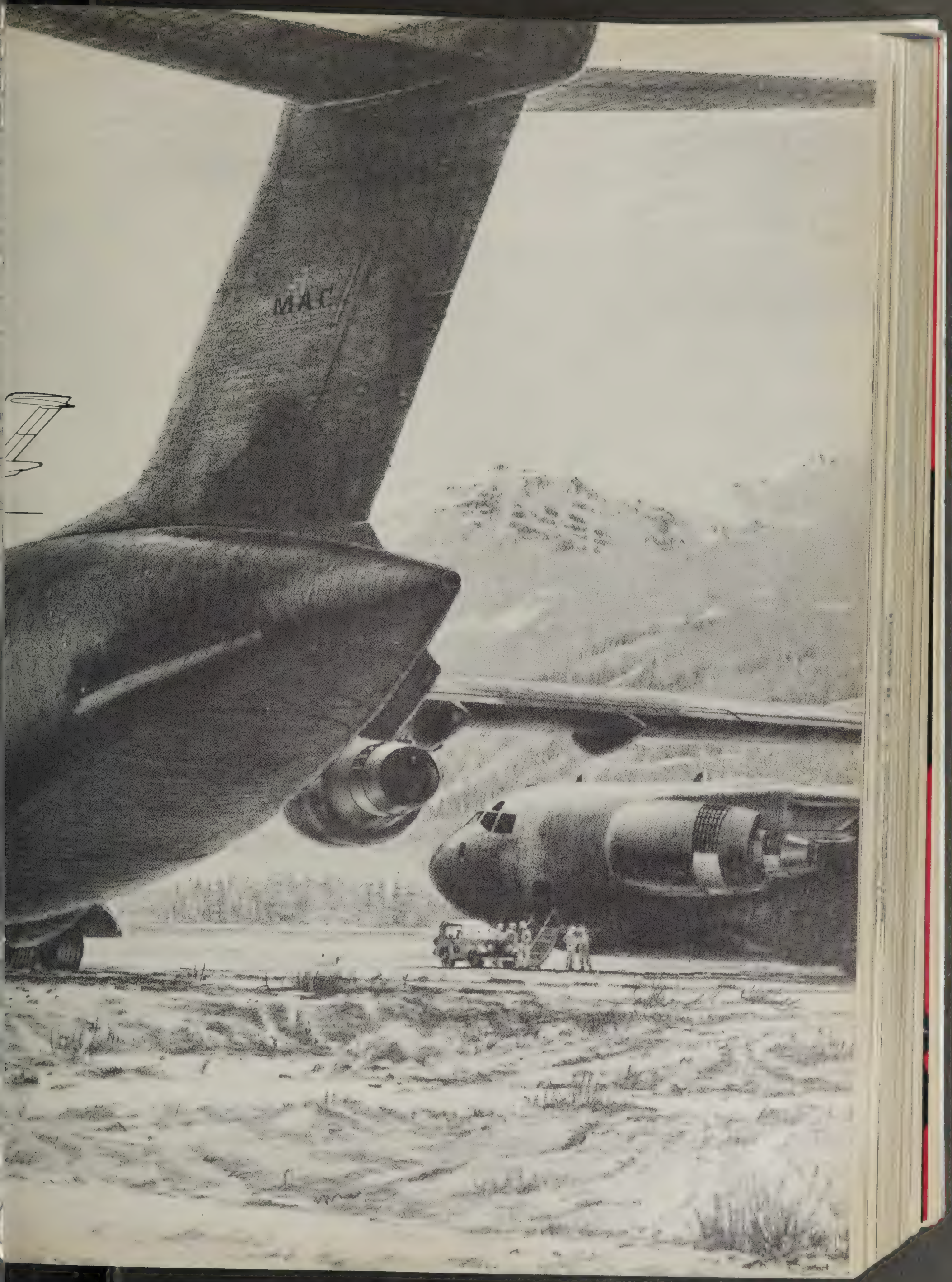
The C-17. Brings the mission down to earth.

When thrust reversers are in use, engine exhaust is deflected upward, clear of dust and debris, so the plane can be maneuvered with little disruption of ground operations.





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MAC

of operational art. Generally, this prerogative belongs to the attacker, but occasionally strategic conditions allow the defender a choice. Quintus Fabius, Field Marshal Mikhail I. Kutuzov and Mao Tse-tung all conducted defensive campaigns in which they fought selectively.

Occasionally, commanders have to fight under unfavorable terms. Such battles, forced on an unwilling or unprepared commander, obviously put him at a great disadvantage. Such battles may also occur accidentally as encounter battles or as deliberate entrapments. Most rarely, a commander may choose to fight at a tactical disadvantage because his operational responsibilities make it impossible for him to decline battle.

Encounter battles have occurred frequently in modern operations. They naturally conclude operational maneuver and precede decisive battle. In Soviet doctrine, encounter battles hold a place of special importance, especially in connection with operational maneuver. Nuclear strikes and deep penetrations lead naturally to loss of contact and to a need to respond quickly when opposing forces meet.

The Soviet solution is to configure operational forces for effective reconnaissance, fast reaction in any direction and mutual support between forces during the exploitation of tactical gains. Their attack from the march is the tactical implementation of this idea. Movement to contact is the closest parallel in U.S. Army doctrine; yet that is rarely practiced above battalion level and its very presence in the draft corps field manual strikes some officers as curious and impractical.

The Army finds itself in the closing days of the late *blitzkrieg* era with new operational vistas about to open and 30 years of lost time to recover. The Army is clearly late in making preparations for large unit operations and, even if it is not under the pressure of an immediate threat, it has a long way to go in filling the doctrinal void, developing the staff skills and organizing the force for large operations.

The signs of the Army's steady fixation on the tactical side of war are obvious. Superb organizations and equipment for that kind of fight have been fielded, but even the best units and materiel reveal a tactical bias and operational inexperience. Although excellent in battlefield skills, Army units and staffs are much less capable in the tasks of getting to the fight in the first place and moving rapidly on to the next.

A number of specific problems come easily to mind. The roles and organizations of corps and armies need clarification. New armored vehicles are optimized for close combat but deficient in the operational virtues of cruising range, fuel economy and mechanical simplicity. Infantry concentrates exclusively on small unit excellence and cannot articulate its operational role. Air defense and intelligence systems emphasize static, shallow coverage and are not mechanically suited or doctrinally attuned to large-scale mobile operations.

Air–ground cooperation has shown improvement since 1982 in response to the tactical aims of deep attack. While this has been worthwhile, the operational issues remain untouched, and those are among the most important relationships in a theater. Links between ground and air campaigns need reexamination and the question of control and allocation, a great sacred cow indeed, could benefit from review.

It simply does not seem practical to manage air–ground coordination at the highest level of command in every situation. What works in the scaled-down theaters of peace will not necessarily provide the flexibility, responsiveness and coordination necessary in a large campaign.

Combat support and combat service support (CSS) are also inadequate to operational tasks. Generally, CSS units lack the mobility, sustainability and communications to support operations over extended times and distances. There are plainly too few CSS units in the force to support a solid operational capability; the great tooth-for-tail exchanges gave Army forces a dubious and immobile set of teeth. The idea that support skills are so simple and unimportant that the Army can do without them until mobilization should be reconsidered.

Training exercises do not help much. There are some exceptions to the norm, but the norm itself centers squarely on the battalion and company, leaving larger units to administer the tests. The large force exercises still held cast corps as player–controllers too often. When they do not, the exercises take place in areas so small that operational problems rarely surface and the requirements for large-scale maneuver, fire planning, reconnaissance and support are not represented faithfully.

There are useful things large units might do. Continental U.S. corps could run command post exercises over vast areas at small cost and great benefit to their staffs and commanders. Consider the potential of organizing a corps movement to contact from Ft. Hood, Tex., toward the Gulf Coast.

Without turning a blade or track, the staff could be put through some drills that have not been done in the Army since 1940. At the same time, brigades might be called on to plan for road movement over several hundred miles or for doctrinally standard but rarely exercised flank and advance guard missions. The support planning alone in such an exercise would be highly worthwhile.

Deployed forces have the same options. They could make such operations more interesting by retracing the moves of their wartime predecessors through Germany or Korea to review the difficulties that actually occurred and to apply new fixes to the old problems.

In time, the schools will produce the trained staff officers the Army needs. This is under way now at both CGSC and the War College. Their greater challenges will be in educating the officers of 20 years' service who will run the Army for another 15 years, and in bringing doctrine and force structure up to date with the nature of contemporary operations.

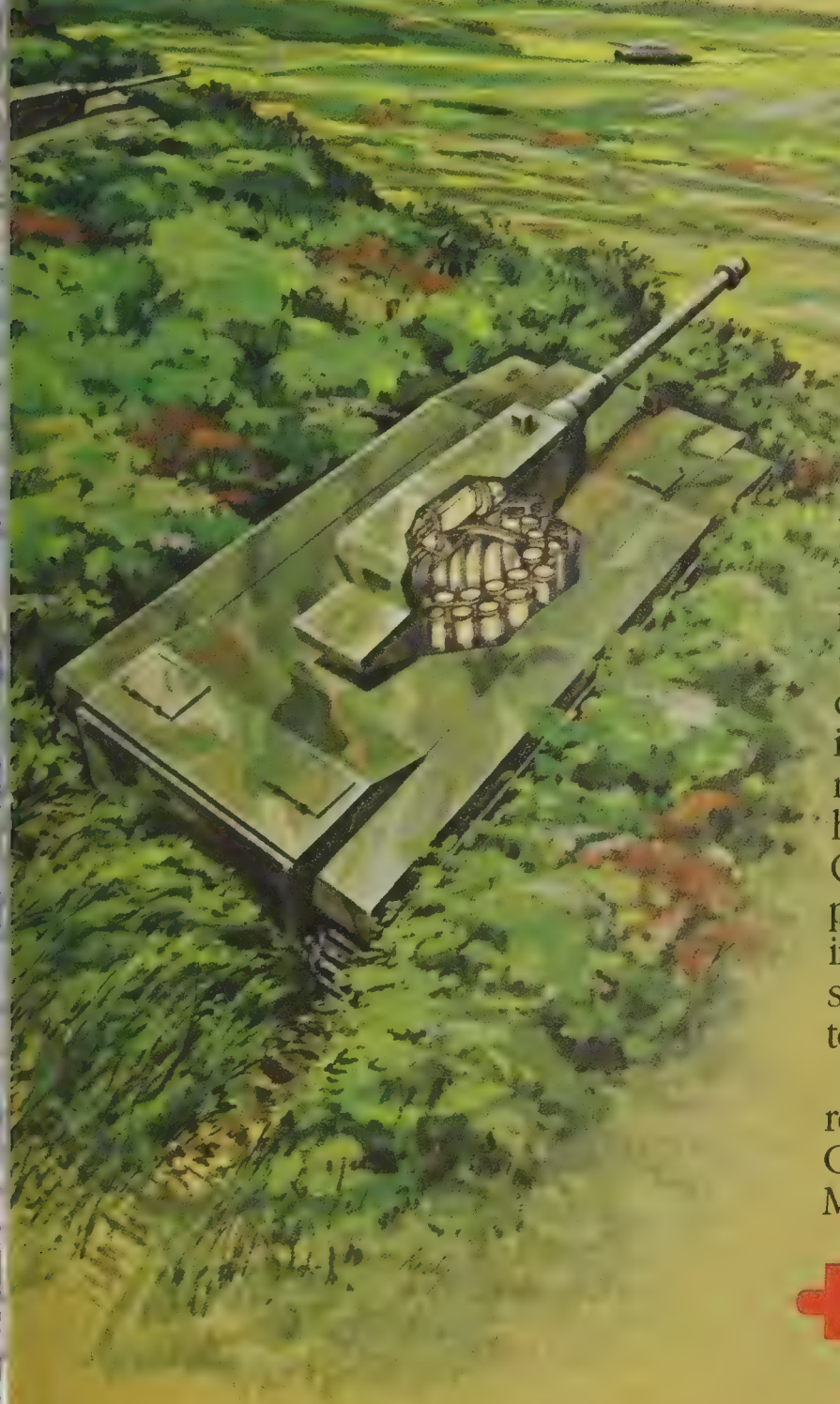
Once that is in hand, Army Training and Doctrine Command might profitably expand the scope of large force training by organizing some joint contingency exercises. The latest efforts at forming joint task forces on short notice succeeded, but did not leave the impression that the Army would not benefit from interservice training.

In the short term, the Army's job is plain and not too tough—it needs to catch up on the fundamentals of operational art, relearn its forms and identify its modern requirements. Army leaders must consider how the organization and make up of the Army affect its ability to conduct large-scale, long-term operations. A new generation of professionals must be taught what to expect and how to operate against an enemy who understands and practices a discipline in which U.S. forces have no current experience.

In the long term, though, the Army must do more than merely come up to par on the neglected subject of operational art. Officers must begin to understand its content well enough to anticipate its future course and to prepare the Army to fight in the operational setting of the twenty-first century.

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By Philip J. Fick
Assistant Editor

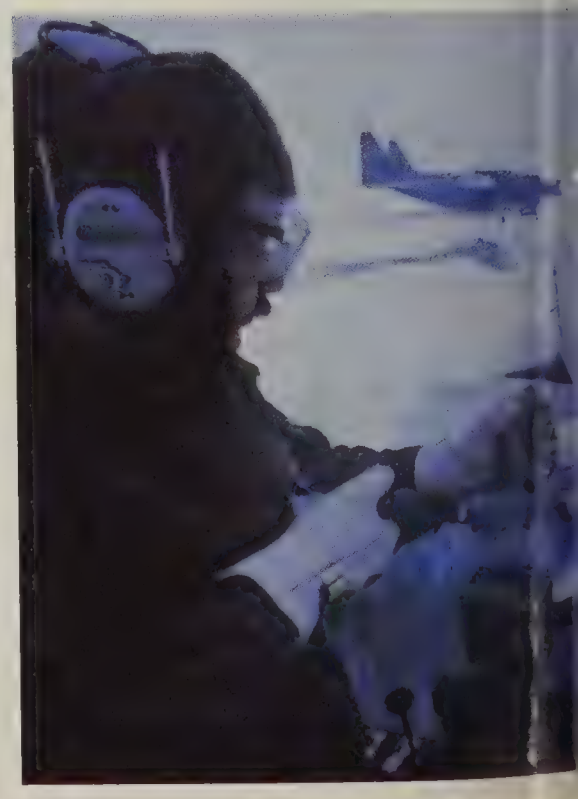
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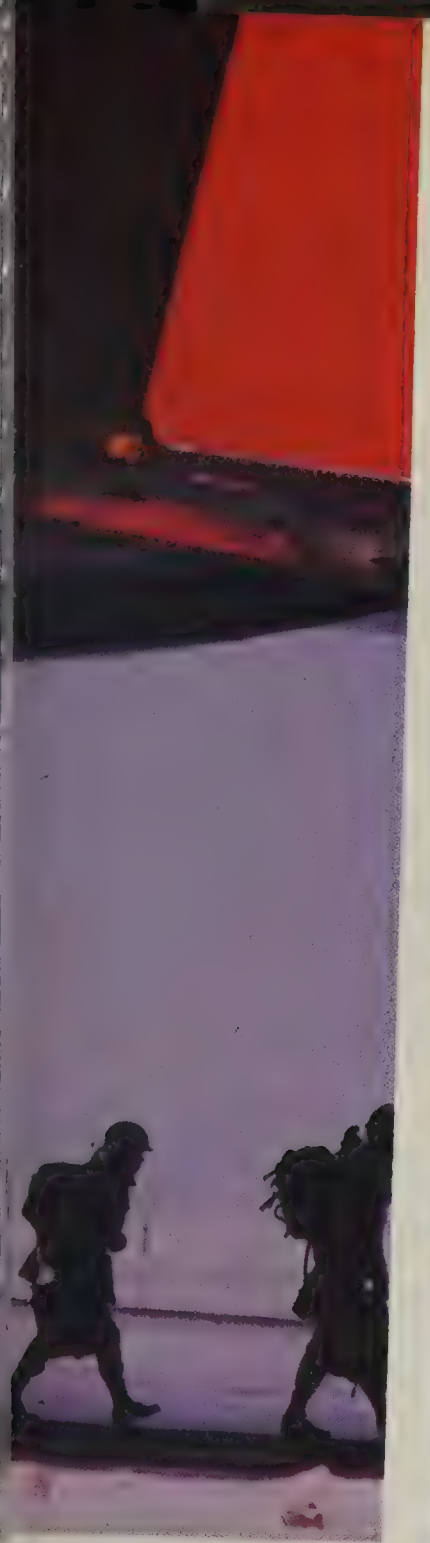
'One of the Coldes

January 1985: it was wintertime in West Germany. In Bavaria, temperatures dropped to 38 degrees below zero Fahrenheit. On the *autobahns* between Munich and Salzburg, traffic was backed up for 50 miles. In Essen, workers used blowtorches to thaw out the ice-covered rail tracks.

At several military installations in central West Germany, however, it was business as usual as 75,000 troops from the United States, West Germany and Luxembourg took part in Reforger 85 (return of forces to Germany), the first winter Reforger exercise since 1979.

During the first two weeks of January, nearly 18,700 soldiers and 300,000 tons of equipment were air- and sealifted to Western Europe from the United States. After linking up with the American, West German and Luxembourg troops and securing their heavy equipment from various POMCUS (prepositioned materiel configured to unit sets) storage sites, the U.S.-based soldiers participated in the corps-level exercise, Central Guardian, from 21–31 January. The redeployment of the troops to the United States was completed by mid-February, in accordance with established timetables.



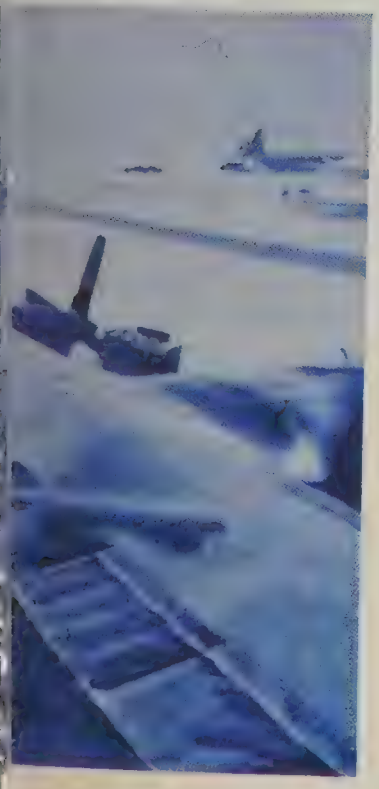


American and allied forces demonstrated their ability to deploy quickly to the field of battle and conduct a corps-level tactical exercise under harsh weather conditions in the first winter Reforger exercise since 1979.

Left, *soldiers from the 4th Infantry Division (Mech), Ft. Carson, Colo., arrive at Rhein Main Air Base, West Germany, during the deployment phase of Reforger 85. The aircraft is a C–160, operated by Luft Transport Group 62.*



Ever'





Above, *medical support personnel at Stuttgart Army Airfield carry a patient onto a U.S. Air Force C–130 while participating in a mass casualty–medical evacuation exercise in support of Reforger 85.*

Left, *S.Sgt. Jane Elkovich, 156th Aeromedical Evacuation Flight, Charlotte, N.C. Air National Guard, cares for a patient on a medivac flight.*

Left, *A1C Felix Nazario, 435th Organizational Maintenance Squadron, Rhein Main Air Base, West Germany, sprays a glycol/water mixture on a U.S. Air Force C–130 to clean off the accumulated snow and ice.*

Right, *Army personnel from Ft. Carson, Colo., arrive at Schiphol Airport, Amsterdam, The Netherlands, where both air- and sealifted troops arrived for the Reforger 85 exercise.* Below, *Sp.4 Scott Nusberger of the 293rd Engineer Battalion (V Corps), Baumholder, West Germany, plows through the snow with a Cat 120 road grader at one of the marshaling areas.*





Right, *ambulances from the 557th Medical Ambulance Co., Wiesbaden Air Base, West Germany, are loaded onto C–130s for airlift to a field hospital at Seigerland Airport.*



The Reforger exercises are conducted annually to demonstrate America's commitment to its NATO mission. The exercises also serve as trial runs to determine how rapidly American-based troops can link up with their European counterparts and deployed or prepositioned equipment in the event of an invasion from Soviet-bloc Eastern Europe. Reforger 85 was conducted in January and February to assess the impact of winter weather on the deployments.

Army units taking part in Reforger 85 included the 4th Infantry Division (Mechanized), Ft. Carson, Colo.; the 197th Infantry Brigade (Separate), Ft. Benning, Ga.; the 1st Battalion (Ranger), 75th Infantry, Hunter Army Airfield, Ga.; 12 active-Army combat support units and 40 Reserve and National Guard units.

V Corps served as the host unit in West Germany, providing soldiers from V Corps Headquarters, the 3rd Armored Division, the 8th Infantry Division (Mechanized), the 11th Armored Cavalry Regiment, the 130th Engineering Brigade, the 41st Field Artillery Brigade, the 22nd Signal Brigade and the 12th Combat Aviation Group. Two West German *panzergrenadier* brigades and a light infantry battalion from Luxembourg also participated.

For Reforger 85, the Military Sealift Command used one of its newest fast cargo ships, the USNS *Antares*, to carry equipment across the Atlantic from Savannah, Ga., to Amsterdam, The Netherlands. The *Antares*, one of eight high-speed container ships purchased by the United States in an effort to increase sealift capability, is 946 feet long and travels at speeds in excess of 30 knots. The ships are undergoing extensive conversions to provide roll-on, roll-off and greater lift capability, and to install facilities for handling helicopters.

Accompanying the *Antares* from Savannah to The Netherlands was the cargo ship *American Eagle*. A third ship, the *William M. Gallaghan*, set sail for Amsterdam from Bayonne, N.J.

With Europe experiencing perhaps its most severe winter in two decades, the weather became a primary consideration during this year's operation. An Army spokesman described Reforger 85 as "one of the coldest ever."

Right, *a surgical team at the Zweibrücken Contingency Hospital treats a patient during a mass casualty exercise conducted for Reforger 85.* Below, *PFC Darwyn Henson* (left) *and Pvt.2 Marvin Dorsey, both from the 4th Infantry Division, Ft. Carson, Colo., fold their pup tent before moving out from a marshaling area near Leuth, West Germany.*







Above, *soldiers from Ft. Carson, Colo., line up in their M113 armored personnel carriers to move out from the marshaling area near Leuth. The vehicles will be loaded on trains for transport to the main Reforger exercise site.*

The most popular piece of equipment, cording to troops in the field, was the rosene heater placed inside tents. When troops arrived in Europe, "warming nts" were set up to receive them and l stations were transformed into mess ilities serving coffee, soup and hot ocolate. At German air bases where ny of the troops arrived, Air Force sonnel had to spray the giant C-130 op-transport aircraft with a glycol/ ter mixture to remove snow and ice. Within a week of their arrival, the U.S.- ed soldiers had successfully linked up h their allies, secured the necessary ipment from the POMCUS sites and ved into position for exercise Central ardian in the northern region of Hesse. a battlefield 90 kilometers deep and 120 kilometers wide, the Orange Forces prepared to attack the Blue Forces to the south of the Ohm River. As in the past, the Orange Team, with elements from the 4th Infantry Division and 3rd Armored Division, attacked and maneuvered for the first week.

Then the Blue Team, with elements from the 8th Infantry Division, 197th Infantry Brigade and 11th Armored Cavalry Regiment, counterattacked. The 1st Ranger Battalion, 75th Infantry, acted as a rear area disruption force.

In a repeat performance of the last winter Reforger exercise in 1979, the weather, which had initially been quite cold, warmed up, forcing V Corps Commander Lt. Gen. Robert L. Wetzel to call off the last 1½ days of maneuvers to avoid damaging the softened terrain with the heavy tracked vehicles.

In spite of the weather, officials at the Joint Deployment Agency, MacDill Air Force Base, Fla., who are responsible for coordinating and monitoring the movement of U.S.-based personnel and equipment, report Reforger 85 remained on schedule and the deployment was completed in "an extremely impressive manner . . . in the most effective use [of the joint deployment system] to date."

The public affairs offices of U.S. Army Europe and 7th Army, the 197th Infantry Brigade (Separate) and the 363rd Public Affairs Detachment (U.S. Army Reserve-Mo.) contributed material for this article.

By Maj. Roger A. Rains

Readiness: The Field Artillery Takes Aim



The Army's 'King of Battle' has been challenged to deliver more effective firepower with fewer troops, and the branch is meeting this tough imperative with an evolutionary modernization program that involves communications, fire control and munitions, as well as guns.

Almost 77 years ago, Capt. William J. Snow, the forward-looking adjutant of the 6th Field Artillery who would later become the first chief of the field artillery, remarked, "There is no branch . . . in which more rapid development is taking place . . . there is no branch in which there are so many unsolved problems." Capt. Snow's observations still ring true today.

In the mid-1970s, after a decade of focus on the pressing events in Southeast Asia, the leaders of the field artillery began to awaken to an ominous, intractable threat that put into question the branch's ability to render efficient and effective fire support to the maneuver arms on the modern battlefield. Their response, manifest in the widely acclaimed fire support mission area analysis produced in 1980 and the associated fire support development plan, clearly identified and redressed such major problems as poor battlefield communications, inadequate target acquisition capabilities, as well as poor delivery system performance and limited munition lethality.

As a result of these studies and plans, videly heralded systems such as the tactical fire direction system (Tacfire), the dvance weapons locating radars known s Firefinder, the multiple-launch rocket system (MLRS) and Copperhead (a first generation, armor-killing, terminally homing munition) became realities. Manned by teams of highly proficient operators, communicators and gunners, these modern systems provide today's maneuver commanders with responsive and potentially devastating fire support.

Such rapid developments have solved many problems, yet much remains to be done. The field artillery is moving in a direction that will continue the well-established trend of improved fire support for the combined arms team. It is an evolutionary, developmental course that will lead, over the decades to come, to even better command, control and communication; more efficient and effective target acquisition; enhanced attack capabilities; and, most significant, more proficient artillerymen.

Reflecting on the place of firepower in twentieth-century warfare, Gen. George S. Patton Jr. once noted—in what might easily be a quotation from the current doctrinal scripture of *FM 100-5, Operations*—"Battles are won by fire and by movement. The purpose of the movement is to get the fire in a more advantageous place to play on the enemy. This is from rear or flank."

One of the most significant challenges facing contemporary fire supporters is harmonizing Gen. Patton's two critical dimensions of combat—maneuver and fire power—on a rapidly changing battlefield where only agile, well-synchronized and audacious forces will be able to exploit opportunities to strike from the front, the flank and the rear. One of the avenues that appears most promising in this regard, and one of the central components of the field artillery direction or azimuth, is enhanced command, control and communications (C^3). Some advances in C^3 can take place immediately; others will have to evolve.

For example, today's brigade-level fire support coordinator, the direct support artillery battalion commander, can promote better fire support now by one change in operational procedure: he can position himself at those locations where maneuver commanders make their critical decisions.

By spending more time at the maneuver tactical operations center than at his own, the fire support coordinator can ensure that schemes of maneuver and fire support plans are integrated and that an appropriate synergism in execution results. This new approach will require subtle but significant changes in the mindset of field artillerymen, but it promises better support through better integrated command and control.

The field artillery's new azimuth also seeks to facilitate the future orchestration of fire and maneuver in at least three



other significant ways. First, the Field Artillery School, Ft. Sill, Okla., will focus its institutional training on the production of highly competent, well-practiced fire support team chiefs and fire support officers competent in maneuver tactics proved at the National Training Center, Ft. Irwin, Calif. Such leaders will know how to support maneuver units with the full arsenal of available firepower including close air, electronic warfare and naval gunfire assets.

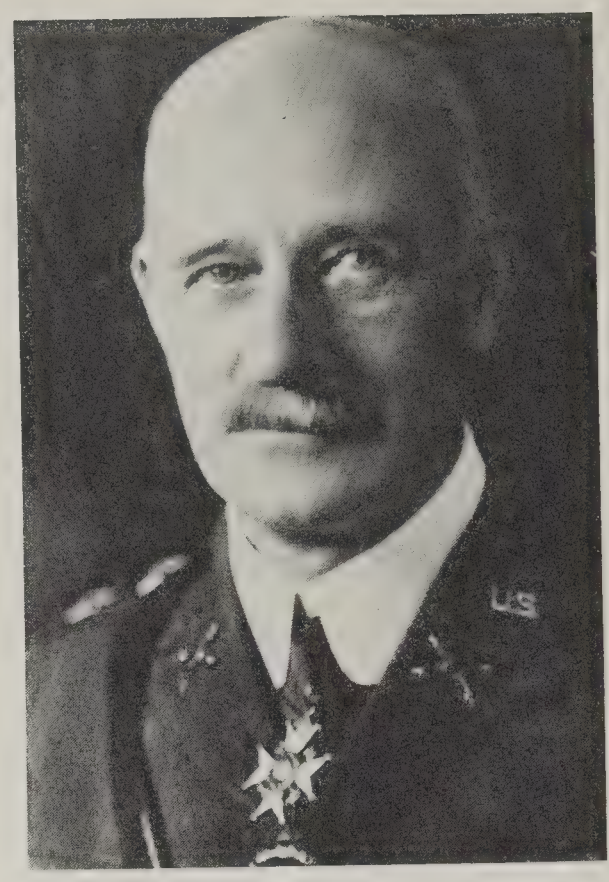
Second, the field artillery community will equip these fire supporters with the tools they need. Such new items as an independent fire planning and weapons system monitoring computer and a survivable, high-mobility vehicle for fire support teams are just two examples.

Finally, the artillery branch will accelerate the development of an advanced field artillery tactical data system to replace the cumbersome Tacfire system. This new system will feature small, redundant common hardware items and software capable of rapid fire planning, target value analysis and fire control.

Improved C^3 procedures, training and systems promise today's and tomorrow's commanders better means for exploiting tactical and operational opportunities. However, if these leaders are to wrest the initiative by exploiting an agile, synchronized C^3 system, they must be prompted to do so by timely, accurate information and intelligence. As Winston Churchill once remarked to the chief of the Imperial General Staff: "The great thing is to get the picture, whatever it is."

Thus, the second component of the field artillery's azimuth focuses on providing decision makers an accurate picture, a better and deeper view of the battlefield resulting from more efficient and effective target acquisition systems. The hardware that will provide this broader, more timely perspective includes an elevated target acquisition system (ETAS), a product-improved Firefinder radar and a remotely piloted vehicle (RPV) system.

Today's ground surveillance and moving target radars are old, cumbersome and limited in range. Fire support coordinators and the commanders they serve need more reliable and survivable observation means to alert them to enemy activity. They will, therefore, profit immensely by the expeditious development and fielding of an ETAS that will—like the observation balloons of yesteryear—allow the battle captain and his fire support advisor to extend their lines of sight over intervening crests and foliage through the use of a telescoping antenna mounting multiple optical and radar systems.



Maj. Gen. William J. Snow, first chief of field artillery, from 1920 to 1927.

Just as they need to see the enemy's movement, so, too, must commanders detect and respond to the threat's impressive indirect fire systems. The advent of the Firefinder radars—the AN/TPQ-36 countermortar set and the AN/TPQ-37 counterbattery radar—give today's field commanders a new, powerful means of simultaneously locating multiple hostile fire units. Yet these systems represent only the first leg of a course that will lead to a product-improved Firefinder that is dramatically reduced in size.

Mounted on a single, self-surveying and self-orienting vehicle, the future Firefinder will extend the commander's electronic eyes by 50 percent over the present AN/TPQ-36 and, furthermore, it will be smarter in its on-the-move target processing and communications capabilities. The future Firefinder operator, the fire support coordinator and the maneuver commander he supports will then have a radar of extraordinary power and range as well as enhanced survivability.

Undoubtedly, the most promising of the systems charted to enhance the future commander's perspective of the battlefield is the remotely piloted vehicle. This multisensor-laden platform is not a large model airplane.

It is a sophisticated vehicle that will locate targets in depth whether they be in friendly rear areas or far over the hill in the enemy's second echelon. It will help portray "the picture, whatever it is" and contribute by target designation to the attack of the enemy wherever he might be.

When linked to the powerful joint surveillance and target acquisition radar system (JSTARS), the RPV's range will allow for deep penetration to the enemy's rear and the early location, tracking and assessment of those high payoff targets whose engagement might well grind the opposition's echeloned attack to a halt.

A time-honored metaphor in artillery is that the total fire support system can be likened to a man: it has eyes to acquire the target; a brain to command, control and communicate the necessary attack instructions and gunnery data; and a mailed fist to render a massive, violent blow to the target. The field artillery azimuth will strengthen the eyes and the brain of that personified system; it must do likewise with its brawn. Accordingly, the leadership of the field artillery has identified two specific programs designed to improve the efficiency and effectiveness of indirect fires—the improve-



MAJ. ROGER A. RAINS, a graduate of the U.S. Military Academy, has served as field artillery battery commander, assistant brigade S3 and battalion S3. He is now editor of the Field Artillery Journal *and executive director of the U.S. Field Artillery Association.*

A four-gun platoon of M109A2 155-mm howitzers in the field; this is the principal tactical subdivision of the new eight-gun batteries in heavy divisions.



ment of personnel to weapons ratios and he enhancement of ammunition lethality.

Field artillerymen are a finite, critical esource. Their population is not likely o increase, but on the AirLand battlefields of today and tomorrow, their ability to deliver vastly greater volumes of ccurate and timely fires is imperative. n short, the field artillery must man nore advanced weapons systems without receiving an increase in manpower. o do so, artillery leaders are pursuing everal force structure and material development initiatives.

For example, as a result of extensive odeling and war-gaming, the Army is ow reorganizing its cannon batteries in attalions supporting heavy divisions to clude eight rather than six howitzers. his effort in conjunction with incremenl upgrading of the M109 155-mm self-opelled howitzer through the howitzer tended life program (HELP), howitzer provement program (HIP) and the fielding of the field artillery ammunition suport vehicle (FAASV) will generate more epower at reduced personnel cost.

M109 batteries will be able to operate ith two highly effective four-gun pla-



Gunners from the Field Artillery Center & School set up an AN/TPQ–36 counter-mortar radar at Ft. Sill, Okla.; although this component of the Firefinder system is new in service, the Army is already looking to a smaller, more versatile and longer ranged version.



Artillerymen training in a Tacfire battalion control center.

Launching an early model of the Aquila remotely piloted vehicle; this development carries the field artillery's hopes for truly long-range target acquisition and designation.

toons, thereby enhancing survivability through dispersion and rapid movement while maintaining constant fire support to the maneuver command.

As the result of HELP and HIP, crews will decrease in size as upgraded fire control, self-surveying and automatic orienting systems allow for autonomous operations at the gun-section level, and automatic loading and fuse-setting devices streamline on-board ammunition handling. A hardened FAASV with a minimal crew will service each howitzer as a mobile magazine.

Improved personnel to weapons ratios will also result from the transfer of personnel spaces from corps-controlled M110 eight-inch self-propelled howitzer organizations into more efficient MLRS battalions. With this change in direction, five additional MLRS battalions will enter the total force and provide each heavy division slice this powerful, yet survivable weapons system.

To ensure that the commanders of the late 1990s and beyond continue to enjoy





A mechanized infantry fire support team chief (left) *confers with his maneuver force commander during exercises of the 197th Infantry Brigade, Ft. Benning, Ga.*

the quality fire support they deserve, today's field artillery leaders are laying out the requirements for extended range rockets and cannons as well as for systems that can do lethal damage to critical enemy command and control radars and emitters.

One such effort is the advanced field artillery close support system that will exploit technology to range out to a maximum of 40 or 50 kilometers, provide a high rate of fire of smart munitions, be transportable on the C-141 and C-17, be serviced by a two-man crew plus a compatible ammunition vehicle and keep pace with the armored future combat system which will eventually replace the M1 and M2 family of vehicles.

After the Battle of Great Meadows in May 1754, Gen. George Washington wrote his mother, "I heard the bullets whistle; and, believe me, there is something charming in the sound." The field artillery azimuth, as it applies to increased lethality munitions, will lead many a contemporary commander to relish the sound of a new family of smart munitions. For the present, the focus is on executing an aggressive ammunition program that will achieve a 60-day supply level in almost every caliber and type of conventional ammunition.

For the future, the mission will be to exploit technology to produce a 105-mm dual-purpose, improved conventional munition for the light artillery and a variety of fire-and-forget projectiles for the larger weapons. Such munitions might include search and destroy armor (SADARM) rounds that will point small, smart armor-killing charges at moving targets; a terminally guided warhead for the MLRS; or a more capable version of Copperhead.

All of these technological advances and changes in force structure and materiel are, of course, superfluous if the artillery does not produce the highly trained, well-conditioned and committed professionals necessary for putting "steel on the target."

Today's Field Artillery School officer basic and advanced courses as well as cannon basic and advanced courses for noncommissioned officers emphasize performing fire support tasks during extended field training exercises on a simulated integrated battlefield. Graduates of these courses know the new weapons systems, including Tacfire. They know how to maintain them and how to make them work in support of AirLand Battle doctrine.

They also learn how to survive and how to lead men through use of the chain of command. Moreover, they understand the necessity for the artillerywide standardization of drills, load plans and fire direction procedures, to mention but three categories in the branch's overall standardization plan.

The field artillery is pointed toward a single goal: readiness—readiness manifest in the delivery of timely and accurate fires in support of the maneuver commander and his combined arms team.

Only by holding true to this direction can today's and tomorrow's field artillerymen continue to make true George Washington's General Order to the Continental Army: "No artillery could be better served than ours."

Cool Enough

The short sleeve khaki uniform we were wearing at Ft. Shafter in the early 1970s was not a particularly cool uniform when out under the warm Hawaiian sun. Consequently, news that the Army was developing a new light green shirt to be worn with the Army green trousers was greeted with interest.

Early photographs of the new shirt and the sight of general officers passing through the islands, looking so cool and comfortable in test versions of the shirt, only increased our desire to get the shirts for ourselves.

Early test reports were not encouraging, however. Those who field tested it, those same general officers we supposed, reported that the light green cloth tended to develop perspiration stains around the collar and under the arms. This was frustrating, as we had seen Air Force personnel from nearby Hickam Air Force Base wearing a similar shirt in light blue for some time. It was an obvious case of Air Force superiority over the Army in an area crucial to our nation's defense. One day I mentioned to a comfortably dressed Air Force friend of mine that the Army was having problems with its new shirt.

He said "Sure, our blue shirt is nice and cool, and looks good, too, but there is one problem—it tends to develop perspiration stains around the collar and under the arms."

LT. COL. THOMAS E. TESKA

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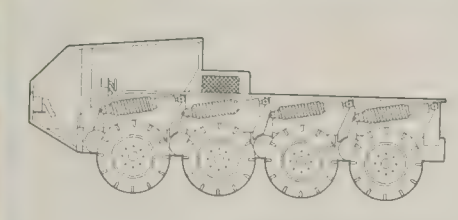


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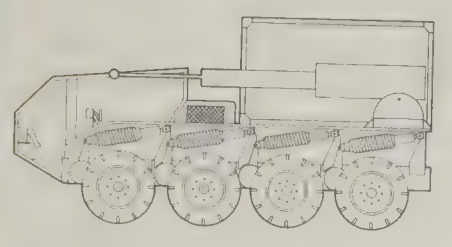
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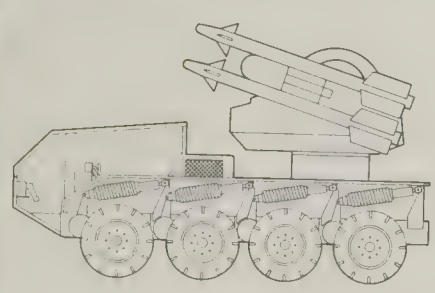
Existing applications of the Standard Tactical Vehicle currently under development or in production.



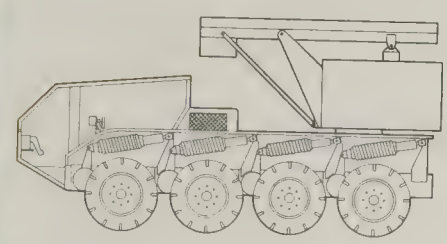
8W12 Standard Tactical Vehicle (STV)



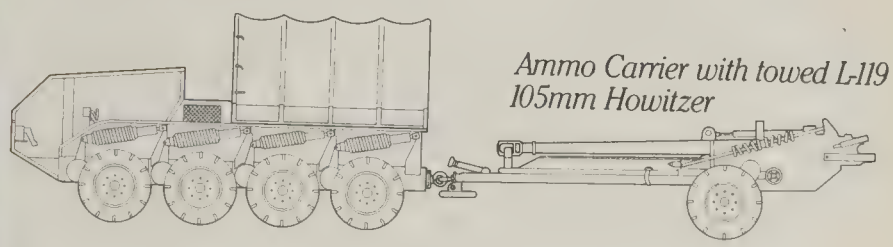
C³I Vehicle



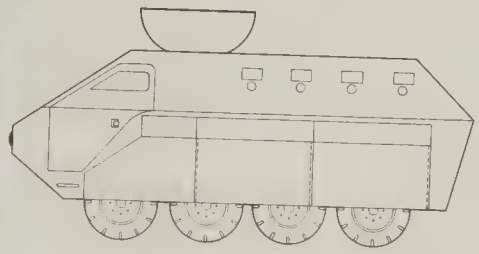
Rocket/Missile Carrier



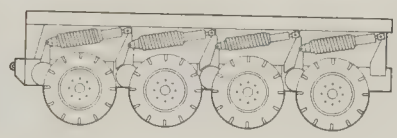
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The key to the STV's superior all-terrain capability is Standard Manufacturing Company's unique Trailing Arm Drive (TAD) Undercarriage. The TAD design features an 8-wheel independent suspension system coupled with hydrostatic trailing arm drive and braking.

Our TAD design puts hydraulic cylinders and a trailing arm at each wheel's spring shock mechanism. A single, direct cylinder control allows the operator to raise or lower any wheel, or any combination of side or end wheels independently from others. The overall vehicle profile can be raised or lowered by 12", allowing for ease of air transportability and much reduced silhouette when emplaced.

The trailing arms to each wheel are jointly driven from a gearbox common to each side which provides optimum torque to each wheel at all operating speeds. This *all wheel drive* means continuous *all wheel power.* While conventional vehicles are shifting gears, or locking out the differential, or switching to 4-wheel drive, the STV with Standard's TAD is in gear and on the run.

And being in gear and on the run is where Standard's STV is at its best: traveling at speeds up to 45 M.P.H. over battlefield terrain that could stop a conventional vehicle in its tracks. It can negotiate side slopes and inclines of 60% and greater, depending on available traction. With the front and rear end wheels raised to shorten the wheelbase, it can make 360° turns twice as fast as most other vehicles. And it can negotiate vertical step obstacles up to 24" high.

With all this, Standard's STV provides an important extra—a better, smoother ride. This results in greater crew comfort and a significant reduction in equipment and vehicle damage due to excessive shock and G-loading associated with rough terrain operation.

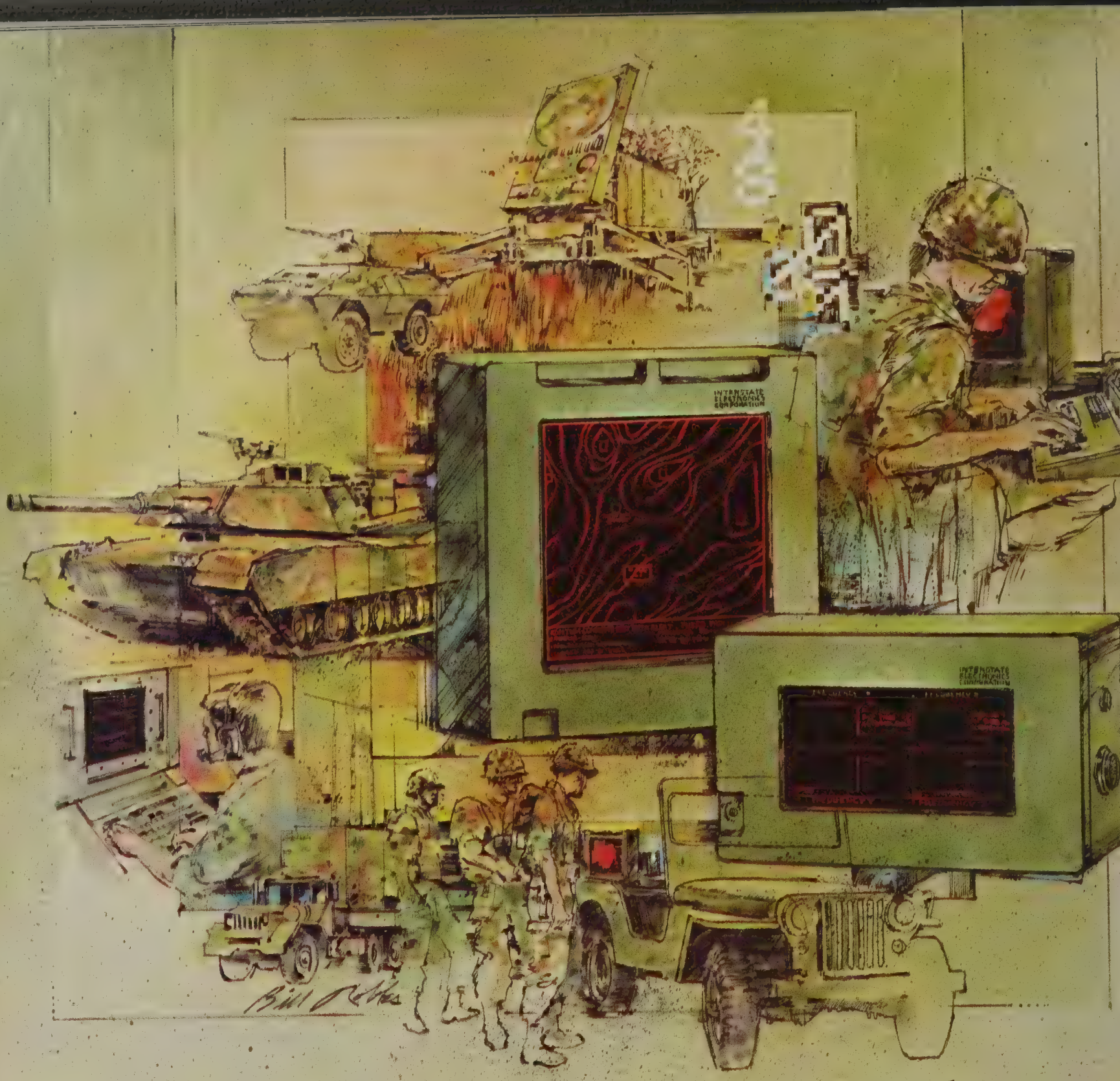
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By Maj. Michael L. McGee

The Magician



Magical powers are not included in their job descriptions, but the the Army's small-unit leaders—he team leaders, squad leaders and pla-oon leaders—get paid to be magicians.

With a handful of determined soldiers, hey can produce acts that will spellbind n enemy, such as materializing in the ight spot at the right time, then disap-earing into thin air, only to appear again t another spot on the battlefield, mov-ıg with a specter's speed, the levitating arbinger of a successful operation. Ser-eants and lieutenants have been doing it ır over two hundred years, and they -e still doing it today.

These magicians come in all sizes, shapes ıd colors, but it is easy to spot them. uiet men of candor, they usually come ıannounced and unheralded. They wear ımmitment like a well-tailored uniform. ıeir competence can be seen, their cour-;e sensed.

Second Lt. John F. Kelleher was one of ese magicians. His short, compact frame rried the heart of a warrior, and his ıiet excitement infected everyone who ıod close to him. Fully four inches short-than any of the noncommissioned offi-:s in his platoon, Lt. Kelleher's true ıture sprang from his superior tacti-cal skills and technical competence.

He knew his own job and everyone else's in the platoon—paperwork and weap-onry, maintenance and counseling, land navigation and patrolling, leadership and caring, training and maintaining. His sol-diers and NCOs did what soldiers were supposed to do because their lieutenant said it should be done. He personally led them to mission completion.

On a beautiful fall day, Lt. Kelleher proved that he was a magician by weav-ing spells on three separate attacks—lead-ing our battalion from "supporting at-tack," to "main attack" to "corps spear-head."

It all began simply enough. Just before dawn, a light infantry battalion from an-other division started our attack to the north by seizing a small, sleepy German village. As the leading company in our battalion, we passed through the foot in-fantry and attacked an intermediate ob-jective, the high ground behind the se-cured town. It was easy, too easy.

As another mechanized infantry rifle company passed our right flank and head-ed across open fields toward the main objective, another densely forested piece of high ground overlooking a major high-way, things began to sour. First, out of

the cold, clear sky came a shrieking airstrike, then some unseen Cobras, firing from the shelter of the main objective. Our sister company ground to a halt, well short of the main objective. Way off to our left, the main attack of the brigade had also come to a halt against strong enemy defenses.

It was time for some magic.

The battalion commander found us, and we alternately stared at our maps and the hill ahead. Just short of the main objective, railroad tracks crossed our path. The rails ran along the top of an unusually high, steep berm, and the berm ran unbroken across the entire width of the objective.

The battalion commander wanted to know if we could get into the lee of that berm, then traverse the front of the objective, come up through a second German town off on our right flank and slip in behind the enemy forces that had devastated our sister company: an end run.

"We'll try," I said, and with Lt. Kelleher's platoon in the lead, we took off.

Thirty minutes later, Lt. Kelleher had led the company along the protected side of the berm, had slipped us through the second village and was picking his way along narrow logging paths through the dense forest and up the back side of the objective. Without fanfare, and with the rest of the company in tow, his platoon quietly crested the objective from behind and violently flushed a covey of Cobra gunships.

The controller gave Lt. Kelleher's platoon credit for five kills—four gunships and one OH-58, which took the immediate pressure off the rest of the battalion. Twenty minutes later, the other platoons in our company had cleared the objective. The highway that ran deeper into enemy territory was ours.

Almost at once, we received a change in mission: "Proceed as quickly as possible as deep into the enemy rear as possible. Get back there and really mix it up!" The brigade's main attack was still stalled.

Intelligence reports showed little or no enemy forces directly ahead of us. If our battalion could get in deep enough, perhaps it would cause the enemy to withdraw and dress his lines, unstalling the brigade's main effort. Fifteen minutes and a short "frag" order later, the company was roaring up the highway, with Lt. Kelleher's platoon again in the lead. The rest of the battalion began to chase us.

This highway was one of two that ran north and in the direction of the attack. The other was the axis of advance for the brigade's main attack, off to our left. About ten kilometers north of where Lt. Kelleher's platoon had destroyed the helicopters, the two highways joined and continued north.

After we set out in that direction, the lieutenant called back on the radio, saying that he was having reservations about crashing through that intersection; his sixth sense, intuition, was working. He said he would not leave it unguarded if he were defending and he did not think that the enemy commander would either.

Still on the move, we decided to cut the corner of the intersection, again negotiate some steep and rugged forest trails, and break out into the open to the north of the intersection. From there we could hop back on the highway and continue to race north. Lt. Kelleher picked a spot and we crashed off through the forest.

It was the right spot. The trails were extremely narrow, too narrow for tanks and barely wide enough for our rumbling personnel carriers. Visibility was poor. Luckily, Lt. Kelleher had dismounted his platoon, against my protests for mounted speed. I saw him disappear among the thick tree trunks with his squads following close behind, their rifle bolts slamming home and machine-gun ammunition belts clinking.

Five hundred meters later, with the rest of the company still mounted and trailing, Lt. Kelleher's platoon came up behind an unsuspecting company of enemy tanks which was overwatching the highway we wanted to take—an ambush just north of that worrisome intersection.

Then the magician went to work.

The enemy tanks were lined up, idling on the edge of the treeline, facing out across the open ground and down at our highway.

We had arrived unnoticed. Lt. Kelleher started his magic on the south end of the enemy's line. With his platoon overwatching, he led a fire team on to each tank. In succession, gently rapping on each cupola, "shooting" each tank commander with his pistol and leaving a soldier on each "destroyed" tank, Lt. Kelleher spun his magic through all 17 enemy tanks.

The rest of us sat, mouths agape, watching and enjoying the dazzling magic show. About the time he finished with his magic act, the tank company commander drove up in his jeep. The enemy captain was irate. Above the panting impatience of our diesels, he shouted at the lieutenant, "You can't do this!"

With quiet reserve, and an almost imperceptible sideward glance, Lt. Kelleher replied, "We just did, sir."

The exercise controller shrugged his shoulders, my lieutenant turned back to his unfolded map and my gloved hand pointed the way across the plastic case toward the next objective. Grease pencils flashed, scribing circles and lines, and we took off, with the magician's platoon in the lead again.

The final objective for the day was another hill. It was thickly crisscrossed with tall hedgerows—"like Normandy," the battalion commander said later. Lt. Kelleher's platoon neatly cut through them one at a time, dismounted, with rifles, machine guns and grenade launchers. The rest of the company followed, providing covering fire from the tops of the personnel carriers.

Lt. Kelleher's platoon was a beauty to behold. Waiting for the tracks to catch up and overwatch, his platoon "hedgehopped" across the short open spaces, following their platoon leader, routing the enemy infantry, spinning through the lessening light like ghosts. There were no shouts, no words—just hand signals and nods.

As the sun eased down beyond the horizon late that evening, 2nd Lt. Kelleher's platoon was the northernmost element of the entire corps. When I caught up with him, he stood in the deepening gloom surrounded by his squad leaders. I knew which one he was by his silhouette—shorter than the rest, ever gesturing with his hands, weaving the spellbinding tale of how his platoon would defend this hill, this night. A good day's work . . . for a magician.

Leaders in our Army can be like Lt. Kelleher. Many are. They are the exceptional small-unit leaders, masters of their profession. Highly skilled in the tactical and technical intricacies of modern warfare, these leaders are committed, extremely competent, understanding men who courageously demand much of themselves and their soldiers.

Watch for the good ones. They just may appear in any unit at any time. They are quiet, candid and unobtrusive. Seek them out. You will usually find them far forward with their soldiers. They are integral members of their platoon, squad or team. Rely on them.

MAJ. MICHAEL L. McGEE serves as chief of the leadership branch, Office of the Deputy Chief of Staff for Personnel at Headquarters, Forces Command.



MLRS gives the U.S. Army more mobility, range and accuracy than ever before

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Land Navigation

High-Tech Solutions To An Ancient Problem

Long delayed by inadequate technology and tight budgets, vehicle land navigation systems are now reaching maturity; they would constitute true, cost-effective force multipliers for the Army's mechanized units, especially in unfamiliar terrain.

The Army has come a long way in the past decade or so. Integral to Army modernization are the significant technological achievements gained despite severe budget limitations, procurement problems and the fatuous advice that "technology does not win battles." In fact, breakthroughs in the application of laser sensor, microprocessor, photoimagery, chemical, turbine, aerodynamic and other technologies are a real boon to Army combat capabilities.

Advances in firepower, communications, mobility, target acquisition and surveillance have not, until recently, been matched by similar progress in land navigation. The terrain orientation of the Abrams tank and the Bradley infantry fighting vehicle is still dependent on primitive tools like the magnetic compass, map and pencil. Their limitations are common knowledge: they are cumbersome, time-consuming and frequently inaccurate.

When errors occur due to the use of such tools, they tend to be self-reinforcing. Consider, for example, the leader of an advance column who, unaware that he is disoriented, charges ahead. Behind him, like so many lemmings, come the remainder of the unit. The result is utter confusion, if not disaster, and this is in bright sunlight. Far more typical is a combat environment featuring cross-country maneuver in abominable weather with elements in combat formation, under direct fire at that.

A corollary to Murphy's Law is: if a unit can get lost, it will. Military vignettes prove the point—the critical message that never arrives; the cavalry charge down the wrong valley; the tank unit, far off its assigned course, oblivious of the fact until it is too late; a disoriented forward observer calling fire on friendly troops; and, importantly, the ammunition and the fuel trucks that miss a vital rendezvous.

Even if such incidents do not bring defeat, the result is often serious in terms of casualties and materiel losses. The dynamics of modern battle greatly magnify the potential effect of disorientation on its outcome.

If a land navigation capability is such an obvious need, why is the need unfulfilled? After all, air and naval forces use sophisticated instruments in demanding air and sea environments. True, aircraft and ships are not tanks and their combat dynamics are different from those of land combat. Evidently, the technical lag is the result of three related factors: perceived priority of the requirement, lack



By Col. John T. Burke
U.S. Army, retired

of land navigation systems (LNSs) practical for land vehicles and a perennially tight budget.

How important is land navigation to land combat? Would an accurate, viable land navigation capability materially increase combat power relative to the dollar expenditures required? Is the high technology needed for a precise, reliable, practical land navigation system for general distribution within the Army now available?

A combat situation in which a truly viable LNS could contribute enormously to combat power can be easily visualized. Potential action by a light motorized rapid deployment force (RDF) in the Persian Gulf area comes instantly to mind.

Picture the likely, and unfamiliar, environment: widely dispersed U.S. forces move day and night across rugged desert terrain. There is an urgent requirement to move rapidly, possibly against significant resistance, before the enemy can mass his forces. Rapid changes in direction result in order to meet unexpected situations. Aerial strafing forces vehicles to button up. Radio silence is periodically imposed. Blinding sandstorms occur suddenly at a critical phase of the operation, and visual landmarks are few or nonexistent. Magnetic compasses are of

little directional help and frequently point to a false course because vehicle ammunition loads and other metallic objects affect the local magnetic flux. The situation is ripe for disorientation and chaos.

Suppose now that the RDF is equipped with a state-of-the-art LNS, especially command vehicles, artillery howitzers and fire direction centers, tanks and infantry fighting vehicles, reconnaissance vehicles, as well as fuel and ammunition supply trucks. The LNS is fully autonomous and requires no external sensor or antenna. The system provides accurate and continuous readings in both heading (direction of movement) and position, the latter in standard grid coordinates. This describes the vehicle navigation aid system (VNAS).

Use of this system means there is no need to stop or to use the radio for orientation. There is no need to dismount, no fumbling with a map, no time-consuming computations or compass recalibration. The momentum and direction of attack are maintained despite the formidable obstacles—an enormous tactical advantage.

While tropical and arctic environments are entirely different, the merits of the LNS apply as they do in the desert. Maneuver in these environments is slowed; but consider such factors as the ambiguity or lack of visual landmarks, the importance and difficulty of night operations, and extremes of weather like tropical monsoons and arctic snowstorms.

Jungle warfare obviously accentuates such problems as coordinating dispersed units, knowing unit locations, delivering fire support, being vulnerable to ambush and the difficulty of guiding units in such terrain. Clearly, there is a vital need for a viable LNS in every battle environment.

The Army must be responsive to a national strategy that involves global commitments, but this is unrealistic unless it seizes the opportunity to enhance its combat power despite severe limitations in manpower and materiel. The shrewd application of advanced technology is fundamental. Sometimes marvelous technology comes in small packages; such is the case with a land navigation system, if only it meets the test of practicality.

Consider how accurate land navigation relates to the evolution of Army force structure and doctrine, which in turn is based on:

- The Soviet's formidable advantage in combat forces.
- Geographical factors; we must be prepared to fight on short notice in any terrain and climate.
- Rapid response calls for strategic airlift, hence fragmented forces (initially) and light equipment.
- The increasing lethality of weapons, both nuclear and nonnuclear.
- The effect of electronic countermeasures, plus increasingly sophisticated radio intercept and target acquisition techniques.

What about the Army of the future, its tactical doctrine and force structure? The AirLand Battle doctrine and "Army 21" concept envision badly outnumbered Army forces confronting a host of hazards such as sophisticated surveillance and targeting devices, and super-accurate enemy weapons, including chemical, biological and nuclear threats.

AirLand Battle doctrine is a considerable departure from past doctrine. It is primarily offensive and calls for the attack of enemy forces deep beyond their forward elements while holding the near-front. While precision firepower is a vital element of AirLand success, the concept relies heavily on force agility and rapid-maneuver tactics. For this, a land navigation system is tailor-made.

To cope with these considerations and requirements, Army tactical doctrine must focus on the rapid response of dispersed units under decentralized command and control (small-unit initiative is paramount); rapid maneuver and sudden, violent attack under the cover of protective weather and darkness; a capability of maneuver units and fire support to accurately converge on the objective; and the fact that countermeasures and sophisticated intercept dictate minimum dependence on radio communications. Also, the conservation of materiel, fuel and ammunition is absolutely essential and frequently overlooked.

The implications of a LNS are best understood in light of the "force multiplier" effect; that is, the leveraging of combat power by an imaginative synthesis of technology and tactical technique. The miniaturization of radio, radar and the proximity fuse, for example, caused dramatic effects in World War II. Terminally guided precision weapons in general are force multipliers, but multipliers are not necessarily weapons. The Army's high-priority self-contained ammunition program is an example of a process which fully qualifies as a multiplier.

The term "multiplier" is sometimes misused. An improvement that has only marginal value does not qualify as a true multiplier and perhaps is not worth the cost. In the context of land navigation, some improvement in the magnetic compass, say a way to recalibrate for magnetic flux error, is hardly a force multiplier. It might provide a marginal im-



COL. JOHN T. BURKE, U.S. Army, retired, is a consultant in the field of weapons development policy.

provement relatively inexpensively but does not provide the system the Army seeks, one not only within the state of the art but a proved technology.

The Persian Gulf scenario described earlier illustrates how a viable LNS provides geometric, not simply marginal, effect and hence fully qualifies as a multiplier. Implications concerning tactical control measures must also be considered. Among these are the line of departure, assembly area, attack position, avenues of approach, axis of advance, direction of attack, boundaries, phase lines and the like. Although defined on the map by neat, precise arrows, lines and circles, in combat these controls become ambiguous. The lines and circles do not move but the unit does. If a unit is disoriented, the control measures are seriously degraded.

Given accurate and reliable land navigation, units would know their direction and location, thus greatly magnifying both the confidence factor and the value of control measures. Indeed, one can envision unorthodox operations involving precise orchestration of movement and fire support, in darkness and the worst of weather, which otherwise would be foolhardy. While no navigation system will entirely cancel the human factor, an accurate, reliable, versatile LNS will certainly minimize the potential for error.

There is no question as to the multiplier value of a viable, general-use LNS, but there remains the question of cost-effectiveness. The technology is on hand and has been empirically demonstrated, but is it good enough to buy in light of system cost and budget limitations?

A look at the situation in Europe and the Middle East is instructive. Contrary to the conventional view, the Soviets are quick to grasp the relationship between technology and tactics. Soviet combat vehicles, including their BMP infantry fighting vehicle captured in the 1973 Arab–Israeli war, featured a LNS. Today an estimated 90 percent of Warsaw Pact combat vehicles are LNS equipped.

Some NATO armies employ various versions of LNSs in limited distribution, however, primarily to enhance fire control. There is a significant interest in a general-use vehicle navigation aid system, with fielding of such a system under consideration.

Evidently, however, the Arab and Israeli armies give the requirement higher priority than do the Europeans. The former envision largely desert battle terrain, the only landmarks (if any) being something that may disappear in a whirl of sand. The Europeans anticipate maneuver in familiar terrain, aided by accurate maps and clearly identified landmarks.

Obviously, there is a major difference in the likely battle environments; however, the Europeans are entirely too optimistic. They have too much confidence in visual landmarks and presume that the terrain, landmarks and routes so familiar in local training will facilitate control in actual combat. In reality, the land navigation capability now on hand is essential to counter Warsaw Pact forces.



What the Army and NATO forces need is a device that "knows" heading (azimuth direction) and distance traveled, and, therefore, the subsequent position—a sensor, in other words. A magnetic compass is a sensor, but, unless it is periodically adjusted, local magnetic flux can seriously affect its accuracy.

A rotating tank turret will create severe distortions, as will any metallic load. A change in ammunition load or mix may change the vehicle's magnetic "signature." Nearby vehicles can affect flux, too. The Army conducted evaluation of this technology but terminated the program because of the problems mentioned.

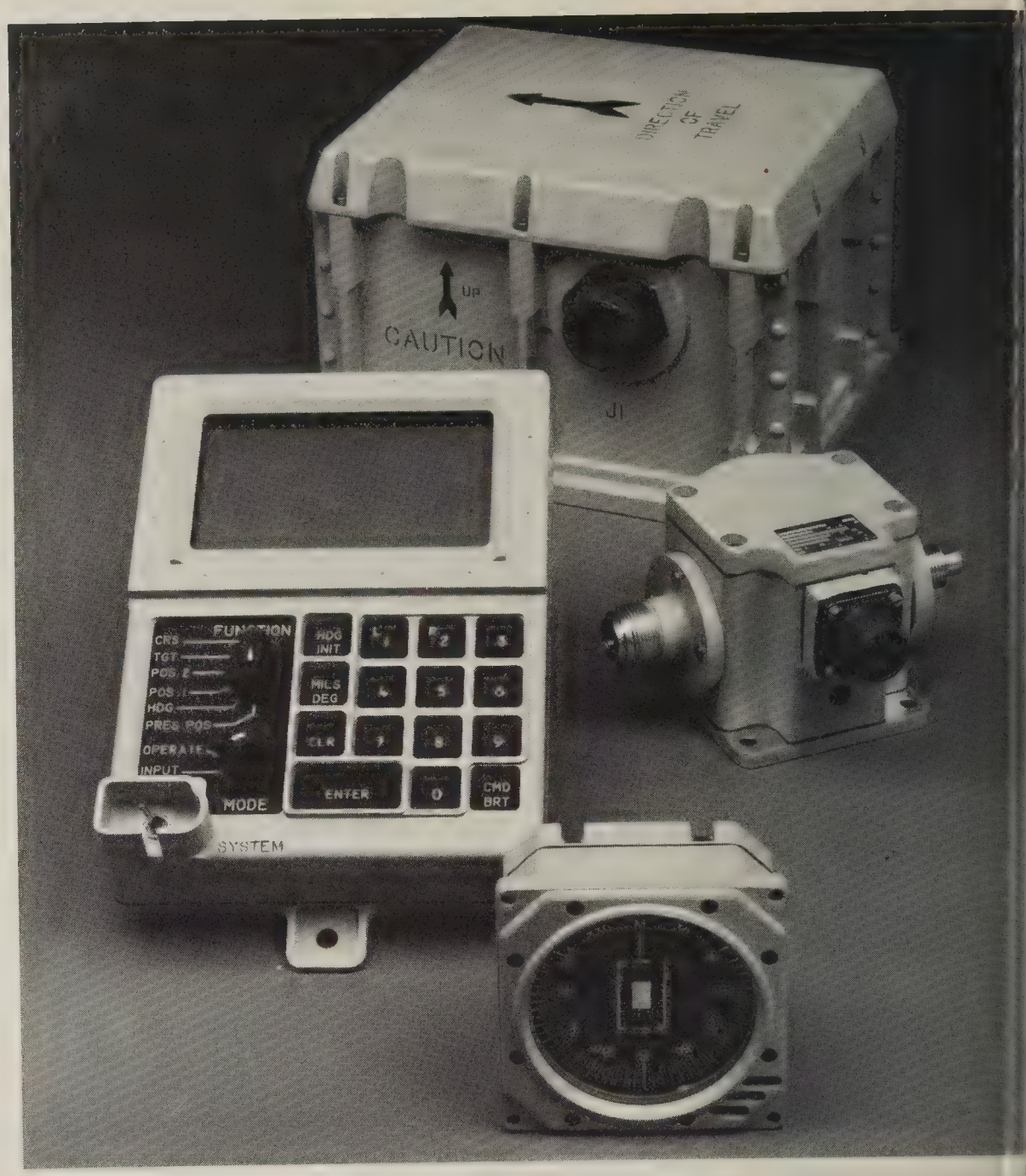
The all-gyro sensor works on the "true-north" principle and is unaffected by local flux. The gyro senses vehicle motion and direction with great accuracy. This system (often referred to as VNAS) is completely autonomous and does not rely on external radio, magnet or other signals for its operation. The advantages are readily apparent since it can be used in a closed hatch and cannot be jammed or detected.

Fluidics, another sensor principle, is an emerging technology. Various laboratory models have been produced, but to date a number of development and production problems plague the design. Temperature variation may result in significant accuracy degradation. Also, manufacturing techniques must be further developed to achieve a reasonable cost level.

Microprocessor technology makes possible the instant conversion of sensor signals into directional heading and position data, whether in the form of the familiar LED display on an electronic watch or, in the case of azimuth direction, on a 360-degree compass or perhaps as moving course lights on a transparent map.

Given the sensor system and data processing combination, this raises such practical matters as reliability, configuration to the vehicle, complexity, ease of training and operation, and system cost. The autonomy of the LNS is, of course, essential on the modern battlefield. Is it affected by magnetic flux? Does it depend on sensors outside the vehicle? Can it be countermeasured?

The desire for precise land navigation is by no means new. Indeed, several U.S. and foreign firms sporting excellent track records in high technology have pursued



Components of Lear Siegler's vehicle navigation aid system (VNAS), including (clockwise, from top) *the directional gyro unit, the distance-measuring electronic signal converter, the driver's compass-type heading display, and the commander's display and control unit.*

the goal during the past two decades. For whatever reasons (for example, impracticality in terms of size, weight, reliability and complexity coupled with high cost), the effort has not produced a viable, general-use system.

Tight military budgets have been a factor, of course, but so have glitches in system performance and overall cost-effectiveness. Moreover, combat developers, until recently, at least, simply failed to see the capability as, potentially, a genuine force multiplier.

Bendix Corp. delivered over 700 of its LNS 101/102 systems to NATO countries during 1965–1970. Bendix also produced preproduction quantities of its later (500-series) LNS for the Canadian Army, but there was no production follow-up. Bendix also produced preproduction quantities of still another system for the U.S. Army, but the program was canceled. Ostensibly, the Army decided to revise the required operational capability statement for a LNS.

As a staff officer of the Army Combat Development Command (predecessor of Training and Doctrine Command, TRADOC) in 1970–72, I do not recall there being any special interest in LNSs. It seems we have a "Catch 22" proposition: no vision of a potential capability, hence no realization of the potential value.

The following overview of three systems will help in understanding how modern land navigation systems work, the technologies employed and what types of workable LNSs are available.

The vehicle navigation aid system mentioned earlier is a development of the Instrument Division of Lear Siegler Inc. (LSI). A completely in-house development on company initiative, the VNAS gestation period was from 1978 to 1983. From the outset, LSI worked directly with U.S. Army (and foreign) elements in the field to meet practical combat requirements. The VNAS is thus "user-designed."

Consisting of four components, the net system is small (less than one third of a cubic foot), weighing only 15 pounds. The VNAS principle is simple: a vehicle reference unit contains a gyro which aligns itself on true north, computes vehicle heading, and senses vehicle attitude and motion. Another unit provides electronic signals which measure distance traveled.

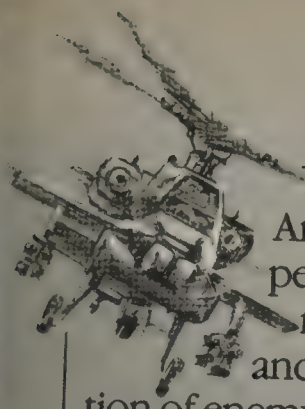
A navigation display unit contains the control switches, displays heading (azimuth), range in grid coordinates and system "status" (that is, what operational mode the system is in) and is normally positioned near the commander. An optional unit displays heading on a compass card which is placed near the driver. The system's memory is nonvolatile (no batteries) and retains data for continuous use, thus the system can be turned off and then turned on at a later date without loss of information.

Output information, depending on mode setting, includes heading in degrees or mils and continuous position in eight-digit coordinates, range and heading to two way points (by inserting the grid coordinates of two points on the map) and the coordinates of a point (a distant target, for example), which are provided if the operator inserts distance (range) to and azimuth of the vehicle–target (from the azimuth indicator possibly). If one wants the heading and range of a course lin between two points, VNAS will provid that information also.

Unlike a magnetic LNS, the Lear Sieg ler VNAS is completely autonomous. is, therefore, not vulnerable to counte measures, crew exposure (to repair, ac just) and battle damage to sensors. Th LSI system has been exhaustively teste over several years, including several tes in Army units under Army auspices. is accurate—positional error being tw percent of distance traveled; heading alig ment is within one degree.

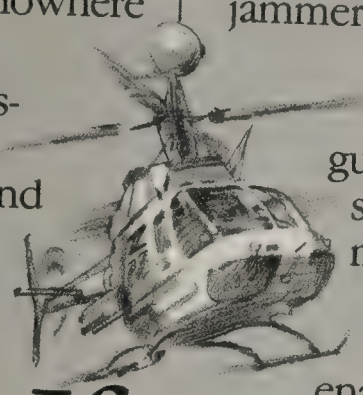
The VNAS is easy to operate, require only a few hours of training, is eas to install, transfer between vehicles an maintain, plus it is rugged. Other than one-time alignment of a support tray fo one component, no calibration or mai tenance is required.

A viable LNS must fit in the tigh sometimes cluttered compartments of A my vehicles, yet be engineered for quic operator response. The VNAS was d signed to meet these requirements as der onstrated on the M60 and Abrams tank the M113 personnel carrier, the Bradl

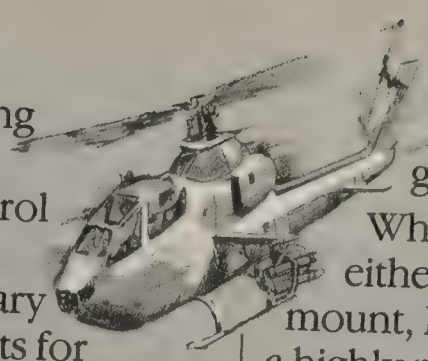


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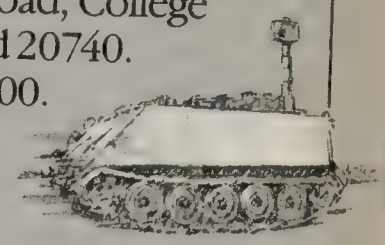


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infantry fighting vehicle, the fast attack vehicle and various other vehicles.

What distinguishes the Lear Siegler VNAS is not only system accuracy but its inherent versatility. For example, take the attack situation in Figure 1 on Page 57. Assume a mechanized company is ordered to seize an objective at point B, then quickly assault objectives defined by points C and D. (The dotted "course-lines" connect points, in this case, within the general direction of maneuver.)

Remember, the predicted positional error of VNAS-equipped vehicles is just two percent of the vehicle distance traveled. As a theoretical optimum, every vehicle would have the navigation capability since so many conditions (for example, night and bad-weather operations, terrain masks, radio silence or failure, vehicle dispersion) affect the extent to which vehicles can guide on one another. We will assume that enough vehicles are VNAS equipped to accurately guide the maneuver.

The leader located at B knows the heading and range to C and D (or to any two points), which greatly facilitates his estimate of the situation. The unit itself maintains accurate orientation at all times and can easily respond to sudden changes in the maneuver pattern.

If the unit does stray from the attack route, the leader knows the directional deviation and what command action to take. He also knows unit location and direction in relation to the boundary line shown. Knowing the range and angular direction (for example, by azimuth indicator) to a target, any VNAS operator can determine target location in grid coordinates. He then becomes a valuable forward observer.

Those precise lines, circles and dots on a map—typically ambiguous on the ground—become far more meaningful with a viable land navigation capability. Even in the inevitable fog and fury of battle, they become finely tuned command and control tools.

A navigation system based on magnetism has been developed by Bendix Aviation Electric Ltd. In their Mark IV, a magnetic sensor converts the vehicle heading relative to the earth's magnetic field into an electrical signal which, when processed, displays the relative vehicle heading angle. The magnetic sensor interfaces with sensors mounted on or near the vehicle's external surface. Electrical impulses from the vehicle's transmission represent increments of distance traveled and are the basis for calculation and display of vehicle position in grid coordinates.

If the vehicle has "large rotational weapons," the turret must be locked in place during the maneuver to avoid heading errors resulting from local magnetic flux. When turrent restraint is unacceptable, the alternative is to insert a directional gyro into the system. The gyro must first be aligned with north (using magnetic sensor signals). A control panel must be used to link the gyro to the system.

Magnetic systems were evaluated by the Army under a contracted program and were found to be too inaccurate. They also placed too many operational restrictions on the vehicle. Thus, that particular program (before Mark IV development) was canceled.

Another vehicle navigation aid system is being developed by the Garrett Corp. using a fluidic device based on the principle described earler. The system detects the direction and speed at which a vehicle is moving, computes location, then displays the traveled course on a cathode-ray tube (CRT). The course is displayed as a continuously updated trail of luminous dots indicating vehicle route on a map.

This combination of a CRT graphic display and transparent map is a way of presenting position. Accurate heading information is not needed to begin travel. After driving a short distance, the driver



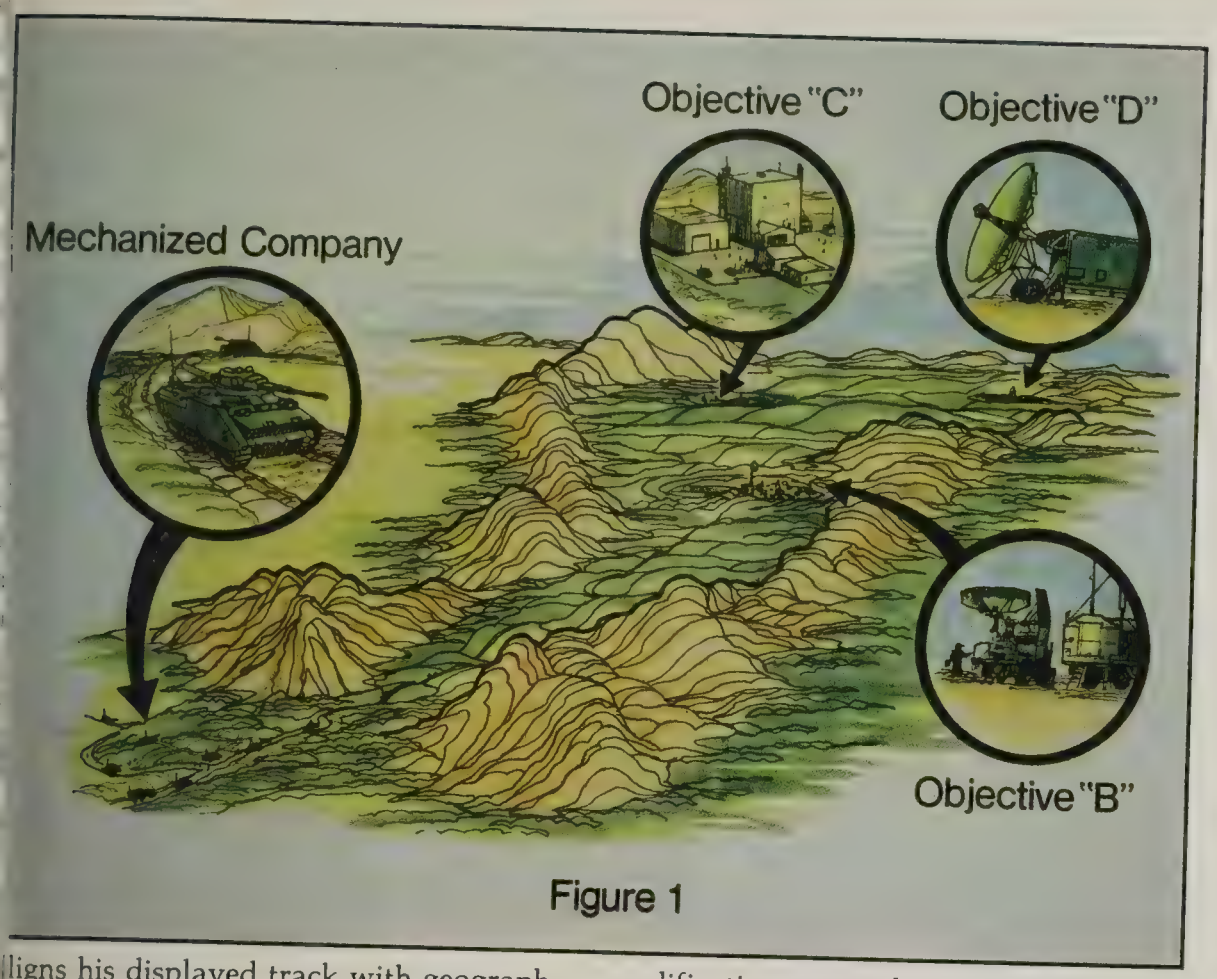


Figure 1

ligns his displayed track with geograph- features on the transparent map sheet; or example, roads, contour lines, streams which present a problem in desert ter- ain).

As the vehicle moves, the driver can ference the vehicle's path relative to her landmarks and make minor correc- ons. Vehicle location and heading are mputed from sensor-supplied vehicle eed and angular rates. This type of nd navigation system consists of four ements: the angular rate sensor, mile- e sensor, navigation computer and the RT.

Several important differences between the described systems are evident and important. At pres- t, the Garrett fluidic VNAS is less ac- rate than the other two and has not been thoroughly tested. It is also less satile than the Lear Siegler system, sufficiently accurate for a number of tical purposes. The fluidic-sensor tech- ogy is certainly interesting, and the ectronic course map" is innovative. w the system stands up in terms of ac- acy, reliability, durability and versa- y remains to be seen.

The Bendix Mark IV magnetic land nav- ion system, too, is interesting tech- ogy. The basic concept is to handle magnetic flux error by what is report- quick magnetic sensor adjustment, add a gyro and control system where is insufficient (the rotational turrets). he magnetic LNS, however, depends external sensors which require vehicle modification, are subject to battle damage and countermeasure, and may require crew exposure. Regarding turret rotation, a free-travel gun is essential for flank protection while on the road, even more so as tanks deploy into battle, and surely this is true of other turret weapons. Comparatively, the magnetic LNS is much larger, heavier and seems more complex.

The Lear Siegler VNAS is functionally versatile, light, compact and simple to operate. It is neither dependent on nor affected by magnetism and, therefore, requires no corrective devices or components outside the vehicle. It was developed in concert with the Army's expression of what a LNS should do, has been thoroughly tested on virtually every kind of Army vehicle and does not involve developmental risks.

The potential cost of a general-purpose land navigation system is difficult to pinpoint at this time. Unit cost is closely correlated with system accuracy and versatility. Thus, the price objective for one fluidic system is in the $5,000–$8,000 range. The system, however, is at the lower end of the accuracy scale, as well as functionally limited.

A highly accurate, versatile system with direction, continuous position and orientation would likely be in the $12,000–$16,000 price range. Eventual cost is affected significantly, of course, by the purchase quantity. The economy of scale makes a difference. In the case of developmental (as opposed to off-the-shelf) systems, cost is one of the risks and the price objective may prove unattainable. Considering what precise, versatile, reliable land navigation can do for combat power, it is surely cost-effective, by whatever definition.

Naturally, in the best of worlds, the Army wants the best general-use LNS it can get. In the real world, unfortunately, a tight budget might force some compromise and some mix of systems representing the various levels of the cost-capability spectrum. Variable user needs also create a dilemma.

The LNS is not essential on some vehicles. On others—tanks, artillery howitzers, artillery and mortar fire direction center vehicles, those used for command and reconnaissance and selected support vehicles—it is vital. In some cases, the LNS is of great value, but less accuracy or versatility might be acceptable in a pinch. Also, Army decision makers are well aware of the problems inherent in multisystem distribution; such problems as replacement inventory, training, parts stockage and supply, plus limited-quantity procurement and its effect on unit cost.

An accurate, reliable land navigation capability is a priority need, not a "nice to have." The proved technology is on hand, and broad system distribution could be accomplished in a year or less. Then those tankers in the Persian Gulf scenario—blind in their closed turrets, beset by sand clouds and countermeasures, their radio useless—would, nevertheless, know where they are and where they are heading.

Lucky Day

Just after World War II started, I was called up in the draft. I was turned down for high blood pressure and then again for a supposed heart murmur.

Things got desperate, and I was called up yet again. By this time, I was married and had three children. At the end of the physical, I heard my name over the loudspeaker. I was to report to the colonel; another rejection, I thought.

The colonel held out his hand and said, "I want to congratulate you, young man. You are the only person who has come through here today with clean ears."

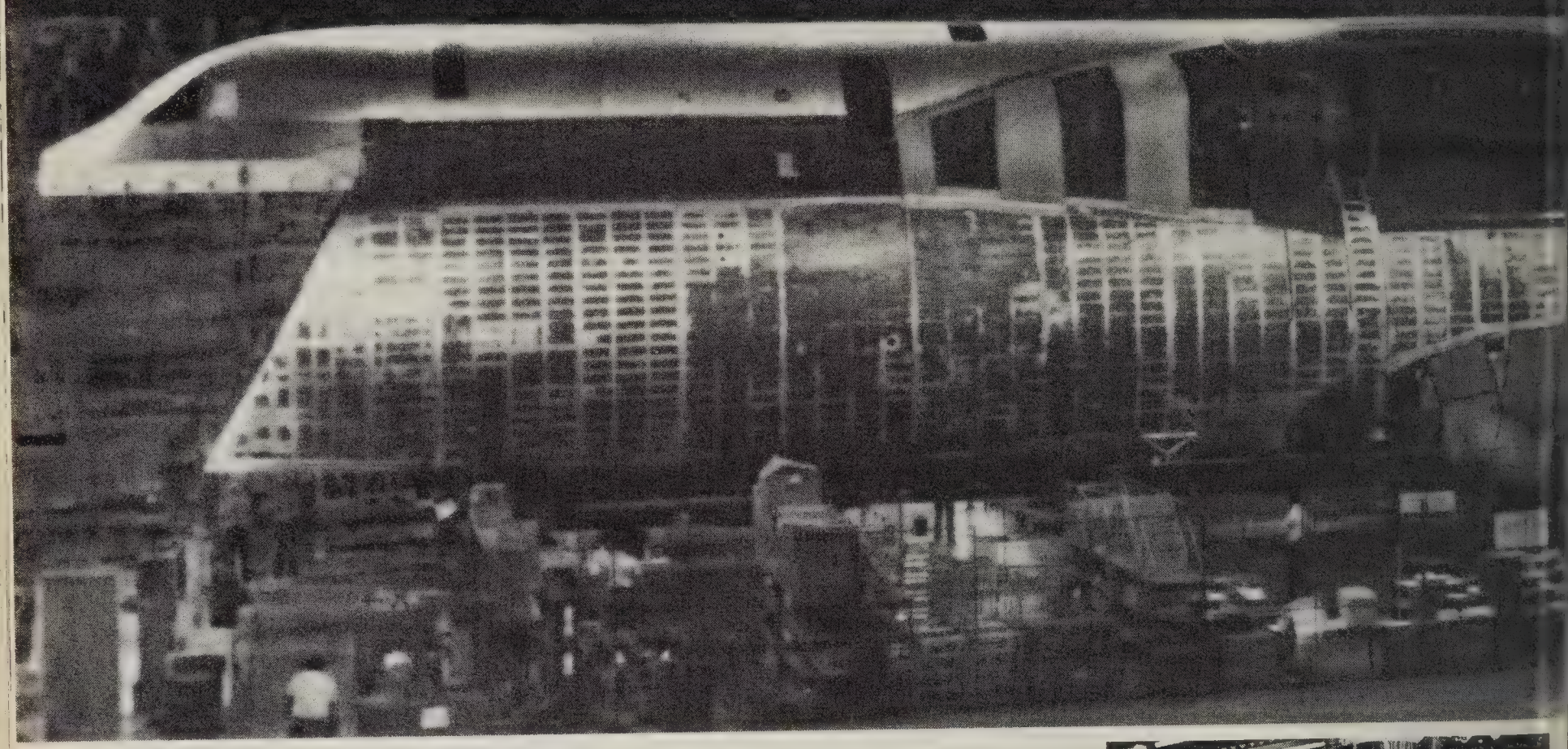
That day I was drafted.

CLINT MELLOR

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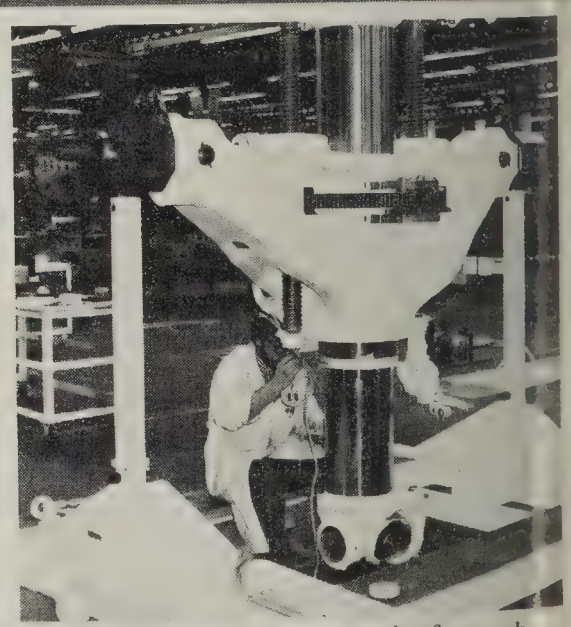
Innovation

A new generation of American airlifters moves closer to completion as the first C-5B undergoes pressure tests.



Lockheed-Georgia

Giving shape to imagination.



Main landing gear structures arrive from sub-contractor, Menasco Inc., Fort Worth, Texas.



Marietta, Georgia—March 1985

The first new USAF C-5B is passing another major milestone on its way toward rollout this summer. Pressure testing has begun, and is proceeding on schedule.

The aircraft will take to the air this fall. Soon afterwards, it will become the first of 50 new C-5Bs to join the 77 C-5As now serving the Military Airlift Command.

America's outsize cargo capacity will increase by 65% through this fixed-price program. Airlift—vital to deterrence—will be dramatically enhanced, increasing the nation's ability to move fully assembled helicopters, infantry fighting vehicles, M-1 tanks and other essential equipment anyplace on the globe. With the speed to deploy them effectively.

The C-5B incorporates numerous technological innovations in aircraft design, materials and manufacturing. Improved avionics and engines with increased reliability are used. The aircraft employs new alloys that are stronger and more corrosion-resistant. New carbon brakes will cost less, last longer, and cut weight by more than 400 pounds per aircraft. During assembly, advanced new presses and automated sheet metal manufacturing systems improve efficiency while ensuring high quality. Working with these systems, the airlifter specialists at Lockheed-Georgia, as well as workers at Lockheed's suppliers in 45 other states, deserve credit for the C-5B setting high standards of program quality.

As these workers move toward completion of the first C-5B, they are giving shape to America's airlift strength well into the 21st century.



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A Matter of Honor

By Marian N. Fernandes

This is his story, not mine. He will never publicly tell it, but it should be told: it concerns not only him but an unknown side of a famous man who is often maligned in history.

For privacy, I will call him Jim.

Jim was a young man in his thirties when I knew him—a bright senior Army captain and then, surprising to him, a newly promoted major. The promotion came in spite of a low efficiency rating given by his previous commander over a matter of honor.

Honor to Jim had become the manifest code in his life, for it was over a lack of honor that his future had initially been ruined. That experience instilled in him a determined will to live by a strict code.

For example, irregularities existed in Army procurement practices, which Jim refused to accept. Exposure would reflect badly on his commander. "Either–or," Jim was told. He accepted the "or" and would not back down.

As a result, Jim was given a lower rating on his efficiency report. He was upset and angry, he ranted and raved, but he would not give in. He was right, and honor demanded that he stand up for what was right.

Jim's luck with his interim replacement commander was little better. The commander, a man of Napoleonic stature, seemed nothing better than to berate Jim over some minor or imagined infraction. To Jim, it seemed he was forever to pay for a youthful mistake: he was one of the first group ever to be expelled from the U.S. Military Academy for violation of its honor code. Jim was among the promising football players, who, as a result of their dishonorable actions, would never again enjoy the roar of approval from the collegiate crowd and would never play professional football. Those who had broken the rules to be part of that select group of athletes would be forever excluded from that group.



Photo: Frederick Sutter

Kicked out of the academy, vilified in the press, ostracized by other colleges and universities, Jim and his group viewed their futures as bleak until an unknown benefactor came to their rescue. The University of Notre Dame informed them that they were to receive full scholarships if they desired and if they accepted two conditions—they were not to play football and they were never to learn the name of their benefactor.

Jim accepted the terms and the scholarship, but he could not accept a gift without acknowledgment. Each year at Christmas, Jim presented a card with a note on his year's accomplishments to the university priest who was his contact with the benefactor. Jim was never certain that the card was received, but he never failed to present it.

Finally, at graduation, when he still could not learn the name of his sponsor, Jim wrote a long letter thanking the man for what he had done and describing his hopes and plans for the future: a master's degree and—in spite of what would be a future of having to prove himself constantly to his peers—an Army career.

When I last heard of Jim, he had managed to have the bad rating removed from his file, had earned his doctorate and had been promoted to lieutenant colonel. I have not checked the Army Register to see if he is listed as retired or at what grade, for during those years a war was going on and I would not want to know that other possibility.

Whatever happened to Jim, I know that in his family home is a framed, brief letter from his benefactor telling Jim to keep up the good work. It was a letter that provided Jim the inspiration to continue his fight for honor in spite of the world around him.

The letter became especially meaningful when all but one of the benefactor's own sons died in their prime while doing their own good work.

The errant young men from West Point who accepted the terms of the scholarships to Notre Dame were sponsored by the late Joseph P. Kennedy, father of America's Kennedy clan.

MARIAN N. FERNANDES is a free-lance writer based in Ligonier, Pa.

Of all the wars in the annals of American history, probably none has generated as much sustained interest as the Civil War between the Union and the Confederacy. It holds the distinction of having been the largest and the last war ever fought on American soil, with the loss of over 700,000 men on both sides. Many are familiar with the names of its most celebrated generals—Ulysses S. Grant, Robert E. Lee, William T. Sherman—and can recall the locales of some of its bloodiest battles—Shiloh, Antietam and Gettysburg.

But there were other less infamous battles and campaigns waged by forgotten men in obscure theaters of operation which had as much if not more impact on the final outcome than those fought in Virginia, Tennessee or Pennsylvania. One of the most important of these was fought in the New Mexico Territory during the first two years of the war, 1861–62. Although the forces involved and the casualties inflicted were miniscule in comparison to those reported in the East, the prize both sides fought for might well have decided the eventual outcome of the entire war.

That prize was the state of California, which had been admitted to the Union in 1850. A bold scheme for capturing the state had been devised by Confederate President Jefferson Davis, who believed that the addition of California to the Confederate states would ensure the survival of his secessionist government in Richmond, Va.

President Davis had good reason to view the acquisition of California, at that time a nonslaveholding state, as the key to eventual victory in the Civil War. A U.S. Military Academy graduate who had distinguished himself during the war with Mexico in 1846–48, President Davis saw the Western territories as a logical place to expand the institution of slavery. With the signing of the Treaty of Guadalupe Hidalgo after the Mexican–American War, the states of Texas and California, along with the territories of New Mexico, Nevada, Arizona, Utah and parts of Colorado, were ceded to the United States.



By Robert S. McKay

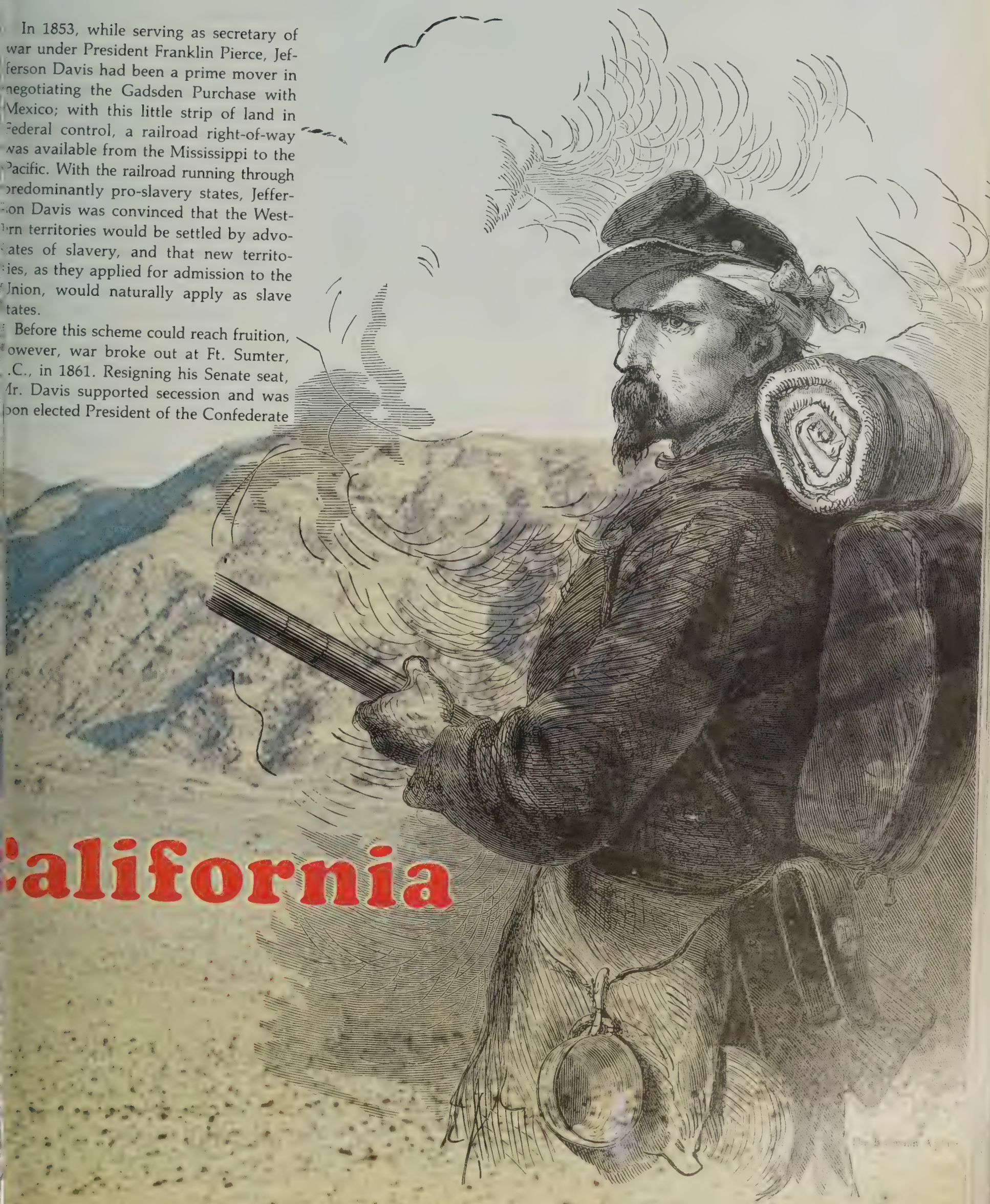
Success Might Have Won War for the South

The Target Wa

Confederate designs on the sparsely settled Southwest might have altered the course of the Civil War, had they been realized. That they were not is due in no small part to the patience and prudence of a Union commander who ultimately prevailed despite early setbacks.

In 1853, while serving as secretary of war under President Franklin Pierce, Jefferson Davis had been a prime mover in negotiating the Gadsden Purchase with Mexico; with this little strip of land in Federal control, a railroad right-of-way was available from the Mississippi to the Pacific. With the railroad running through predominantly pro-slavery states, Jefferson Davis was convinced that the Western territories would be settled by advocates of slavery, and that new territories, as they applied for admission to the Union, would naturally apply as slave states.

Before this scheme could reach fruition, however, war broke out at Ft. Sumter, S.C., in 1861. Resigning his Senate seat, Mr. Davis supported secession and was soon elected President of the Confederate



California

Photo by L. James Binder

States of America. Even as the impending clash of armies seemed imminent in Virginia, however, President Davis was still looking to the West for eventual salvation.

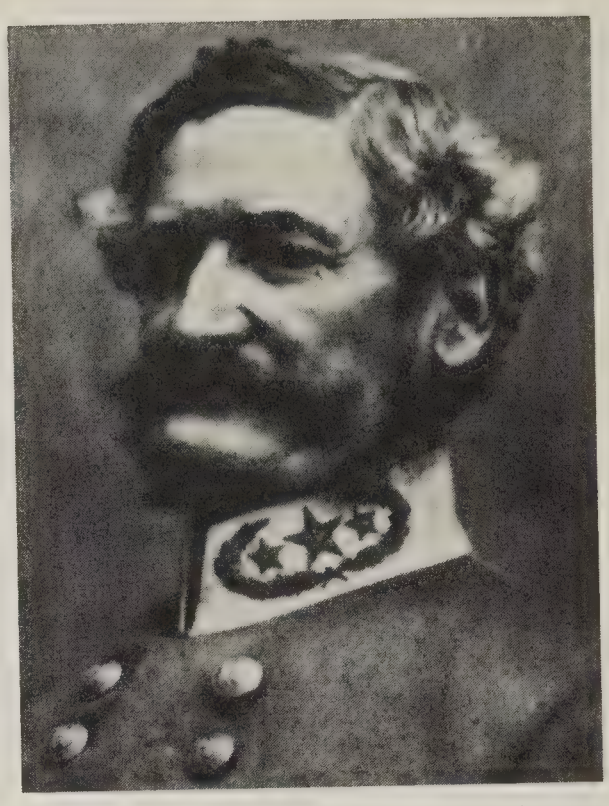
For President Davis and many of his advisors, the long-term strategic goal was diplomatic recognition by the European powers, particularly England and France. If the Confederates could hold off the Union invaders long enough and maintain open supply routes to market cotton in Europe, the Union would have little chance of subjugating the South.

At the outbreak of the war, both England (still harboring animosity toward the Union from the War of 1812) and France (whose ruler, Napoleon III, had designs on Mexico) granted the Confederacy "belligerent" status, which put them on equal trade footing with the Union. To keep the South from exporting cotton and importing munitions and other needed supplies, the Union Navy set up a blockade of the Gulf of Mexico and the lower Atlantic coast, in hopes of cutting the Confederate supply line.

This is where the value of California became strategic in nature; not only could its gold fields, booming since the 1840s, supply the Confederacy with needed funds to supply its war effort, but the possession of California would give the South 800 more miles of coastline which the Federals could not possibly blockade effectively.

Without the gold from California to bolster the Union coffers, and with enough cleared port facilities to trade without Union interference, the Confederacy would, felt Jefferson Davis, surely win the diplomatic recognition the Europeans were on the verge of granting. Once granted this status, the Union could not hope to prevail against the secessionists.

In 1861, a secessionist convention held in Tucson, Ariz., had declared itself for the Confederacy and had sent a delegate, Granville Ourhy, to the Confederate Congress. In southern California, pro-slavery advocates were talking about joining the Oregon Territory and forming a separate nation. The Mormon settlers of Utah, denied statehood in 1849 over the issue of bigamy, were viewed as being potential allies, as were most of the settlers



Brig. Gen. Henry H. Sibley, C.S.A.

of the southern part of New Mexico.

If California or at least the southern portion of it could be seized by the Confederates, a transcontinental supply line could be set up which would negate the effect of the Federal blockade. With Mexico weakened by war in 1848, Mr. Davis even envisioned invasion of northern Mexico, particularly Baja California, from which he could control the Gulf of California and further thwart the Union attempt to stifle trade.

The problem with his plan lay in the fact that Federal forces were at that time occupying some key points in New Mexico and Arizona. To move against them, President Davis chose Henry H. Sibley, a former Union major who had spent much time in the territories, and who had invented the famous Sibley tent and camp stove. Jefferson Davis commissioned Henry Sibley as a brigadier general and directed him to raise a brigade of volunteers in Texas, their objective being to clear the Federals from New Mexico by gaining control of the Rio Grande.

With Union forces swept from New Mexico, Brig. Gen. Sibley could march on toward California with virtually no resistance to overcome but the hot sun and shifting desert sands. After capturing the scattered Union forces, Gen. Sibley and President Davis anticipated that Mormon and pro-slavery recruits would flock to the Confederate banner, and could be armed with the 8,000 stands of arms Gen. Sibley planned to capture during his campaign.

Secessionist sympathizers in California, hearing of the general's triumphs in New Mexico, would then begin waging guerrilla warfare in California, thus forcing the undermanned Union commander to divide his forces thinly across the state to protect vital Union positions. This would make it almost impossible for the Federals to meet Gen. Sibley's brigade in force, thereby ensuring his eventual success. With their backs to the Pacific and no place from which to draw reinforcements, the Federals would certainly, thought President Davis and Gen. Sibley, be forced to surrender California to the Confederacy.

By the end of 1861, the general was back in Texas, having raised three regiments of mounted troops. He proceeded directly to El Paso to secure necessary supplies, after which he would march his brigade up the Rio Grande to secure his newly created Confederate Department of New Mexico.

While Gen. Sibley was busy planning his conquest back in the Confederate capitol, a regiment of Texas Mounted Rifles under the command of Lt. Col. John R. Baylor, had assembled and marched on Ft. Bliss, just outside El Paso. The small Union garrison surrendered almost immediately, providing Col. Baylor with much-needed supplies and equipment.

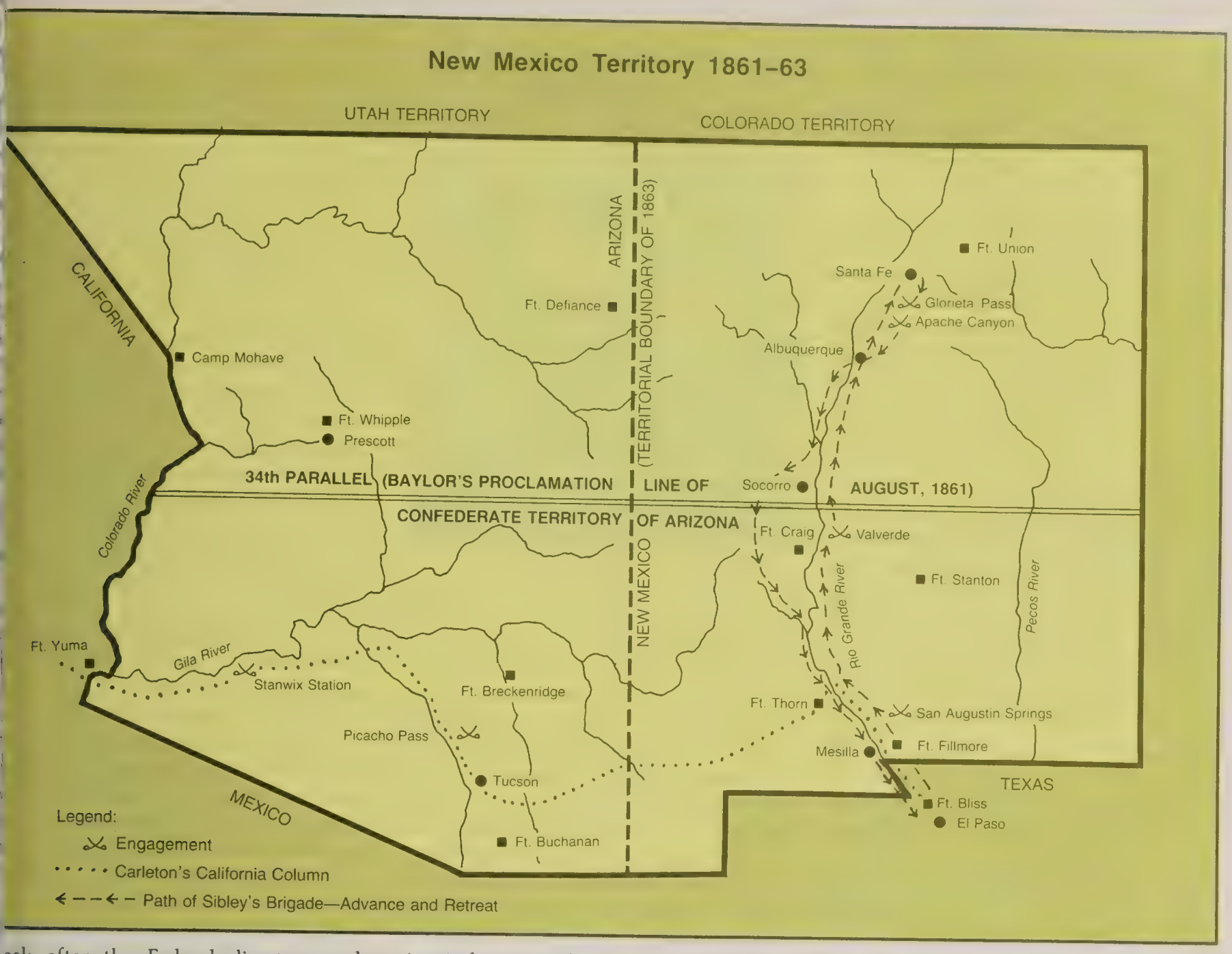
Turning his attention and 350 men to the north, he proceeded toward Ft. Fillmore, 40 miles above him on the Rio Grande and just across the river from Mesilla, a hotbed of secessionism.

At this time, New Mexico and Arizona were administered as one Federal territory, and there was much pro-slavery sentiment among the settlers in the south of it. Many of these secessionists wanted to divide the territory at the 34th Parallel, creating a Confederate state, Arizona out of the southern portion, but the 7th Federals at Ft. Fillmore were in the way.

On 24 July, 1861, Col. Baylor and his men arrived just outside a hospitable Mesilla. Across the river the 700 Union regulars, under Maj. Isaac Lynde, outnumbered the Confederates by a two to one margin. After a halfhearted skirmish the next day, Maj. Lynde mysteriously ordered that Ft. Fillmore be abandoned and marched his men toward Ft. Stanton 140 miles to the northeast.

But Col. Baylor had no intention of allowing Maj. Lynde to escape and hooked up with other Union forces. On the 26th the colonel and his Texans caught up with the fleeing Federals at San Augustine Springs, while Maj. Lynde was eating lunch. With no stomach for a fight, the major surrendered his command of 7[illegible] without a shot fired. Coming only [illegible]

ROBERT S. McKAY is director of the Combat Martial Arts Referral Service and a free-lance writer who is currently attending the University of Alaska.



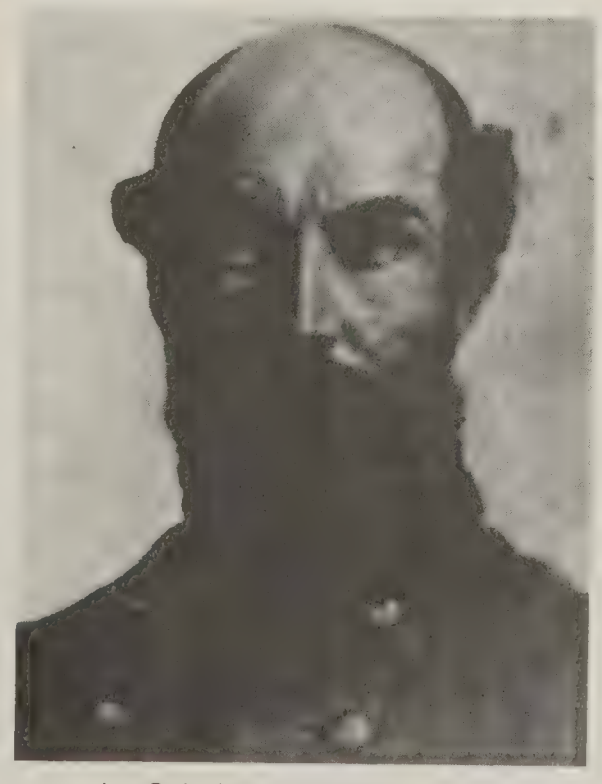
eek after the Federal disaster at the st battle of Manassas (Bull Run), Maj. nde's surrender was branded an act cowardice or treason, and he was opped from the Army and stripped of s rank shortly thereafter.

The Union commander at Ft. Stanton, having heard of Maj. Lynde's capture, immediately burned all pplies at the fort and ordered his garon north to Albuquerque, N.M., leav- Ft. Craig as the only remaining Union onghold below the 34th Parallel.

Returning triumphantly to Mesilla on August, Col. Baylor issued a proclamaon declaring a newly established Conlerate Territory of Arizona below the h Parallel. The new territory stretched m the Texas border to the Colorado ver, giving the Confederates an open ıte to California along the trail used the Butterfield Overland Mail. Col. ylor selected Mesilla as the territorial ıital and proclaimed himself military d civil governor, an action later enrsed by the Confederate Congress.

He spent most of the rest of the year eslishing his new government, appointing judges, marshals and other civil administrators, as well as attempting to defend Arizona settlers from raids by the Apache, Comanche and Kiowa who inhabited the region.

This situation did not change substantially until the arrival of Gen. Sibley on 14 December, at which time he took command of Col. Baylor's regiment and the Department of New Mexico. Leaving the colonel to administer the affairs of Confederate Arizona, Gen. Sibley and his force of 3,700 men set out toward Ft. Craig, where 4,000 Union troops stood between him and the capture of Albuquerque and Santa Fe, N.M. After that, it would be "on to California!"



Lt. Col. John R. Baylor, C.S.A.

At Ft. Craig, the Union commander, Col. Edward R. S. Canby of the U.S. 19th Infantry, was hastily preparing for a Confederate siege. Col. Canby had been one of the few Army officers of rank in the Southwest who had not gone over to the Confederacy at the outbreak of hostilities; William W. Loring, Joseph Wheeler, George B. Crittenden, James Longstreet, Richard S. Ewell and Henry Sibley had all resigned their commissions and eventually became Confederate generals.

Oddly enough, both Gen. Sibley and Col. Canby had known each other well at West Point, having graduated one year apart; odder still, Col. Canby was Gen. Sibley's brother-in-law as well. Realizing that Gen. Sibley would march up the Rio Grande and attempt to capture Albuquer-

que and Santa Fe, Col. Canby assembled all of his garrisons, which had been scattered across the territory, and trained and equipped the New Mexico volunteer regiments under the command of Col. Christopher (Kit) Carson.

On 3 January, 1862, Gen. Sibley and his 3,700 Texans occupied Ft. Thorn, which had been abandoned by the Federals along with Ft. Breckenridge and Ft. Buchanan. While there, Gen. Sibley planned his march up the Rio Grande while his men gathered supplies for the coming campaign. Finally, on 7 February, he led his Army of New Mexico north, his objective being the 4,000 Federals holed up at Ft. Craig.

Meanwhile, Col. Canby continued to make preparations for the defense of the fort, as well as for the remainder of the Federal Territory of New Mexico above the 34th Parallel. He had received intelligence which led him to believe that a major offensive might be directed against Ft. Union above Santa Fe, led by Confederate Maj. Gen. Earl Van Dorn from his position in Texas above the Canadian River.

For this reason, Col. Canby had left a sizable force at Ft. Union as well as at Ft. Craig, in anticipation of an attack from either direction. Unknown to Gen. Sibley at this time was the fact that about 1,200 Colorado volunteers or "Pikes Peakers," under the command of Col. John Slough, had made a forced winter march to reinforce the garrison at Ft. Union. This would turn out to be Col. Canby's trump card in the campaign for New Mexico.

On 19 February, Gen. Sibley's force encamped across the river from Ft. Craig. Col. Canby braced his forces for an attack at dawn. An unsuccessful attempt was made by one of Col. Canby's irregulars, Capt. James (Paddy) Graydon, to kill Confederate horses and mules under cover of darkness by tying fused howitzer shells to the mules and driving them into the Confederate lines. Unfortunately for Capt. Graydon, the mules attempted to follow him back across the river, causing an explosion which did no damage to either side.

On the morning of 20 February, Col. Canby was surprised to find that Gen. Sibley had broken camp, and that his force was moving upriver, possibly intending to bypass the fortified Union position and head upstream to the vital supplies warehoused at Albuquerque and Santa Fe. Realizing that this would endanger his supply line and possibly cut him off from the rest of his command at



Brig. Gen. Edward R. S. Canby

Ft. Union, Col. Canby sent Lt. Col. Ben Roberts upriver with a regiment of regulars.

Col. Roberts was directed to cross the river ahead of the Rebels and attack their flank before they could deploy. Instead, he crossed the river at Valverde, N.M., where the Rebels were waiting for him on the high ground of the mesa above the riverbank. An initial Union attack was repulsed, and word of this was sent to Col. Canby as both sides maintained their positions as night fell.

The next day, fighting commenced again in the morning, Col. Roberts having been reinforced with three more regiments including Kit Carson's volunteers. Union forces managed to push back the Confederates only slightly, which was how Col. Canby found the situation when he brought up the last regiment and assumed command. At this time, a Col. Green was in command of Gen. Sibley's force, the general having allegedly become too drunk to give orders. This no doubt changed the outcome of the battle, because Col. Green was a true fighter.

Shortly after Col. Canby had assumed command and brought the last regiment from the fort to Valverde, Col. Green's forces led a coordinated charge against the helter-skelter Union flanks, Confederate cavalry in front of dismounted infantry. On the Union right, Kit Carson's volunteers performed admirably, beating back an assault that involved the use of squirrel guns, double-barreled shotguns, lances and hand-to-hand combat. The Confederates were unable to turn the right flank of the Federals and were repulsed.

On the left, however, the situation was better. Due to the fact that one group o volunteers had failed to move forwar from the river, the flank of a Capt. Mc Rae's artillery battery became expose and was overrun by the Confederat charge, resulting in the death of the cap tain and the capture of his guns.

Turning their captured artillery piece on the Unionists, the Confederates de stroyed the Union lines, killing scores o men and horses as they attempted to fle back across the river to Ft. Craig. On observer described the Confederate charg as "eight minutes of fighting, terrific be yond description."

As Col. Green was rallying his troop to follow the routed Federals and finis them off, Col. Canby sent across a me sage requesting an armistice during whic the dead and wounded could be remove from the field. Having been appealed t as a gentleman, Col. Green agreed an did not follow up what would probabl have been the end of Col. Canby's 4,00 man force.

While Col. Green and his Texans we reveling in the day's triumph and passin by an opportunity to crush the route Federals, Col. Canby sent word to small garrison in Albuquerque and one in Santa Fe to burn all supplies ar destroy all equipment which might b captured by the Confederates.

After Gen. Sibley had recovered fro his "incapacitation" at Valverde, he a lowed his troops a day's rest before pus ing ahead to Albuquerque, where h hungry army anticipated finding suppli and forage in abundance. The Feder regulars and volunteers under Col. Ca by were considered a minor threat an were dismissed. Besides, if Gen. Sibl could hold Santa Fe and Albuquerqu Ft. Craig would soon have to be aba



oned for lack of supplies.

What Col. Canby had not been able to ccomplish on the battlefield, he had ac- omplished by guile. When Gen. Sibley's rmy of New Mexico reached Albuquer- ue, the Federal stores had been destroyed. ontrary to what many Southerners had ssumed, the settlers and natives had re- ained pro-Union, and had hidden or efused to sell what supplies were avail- ble in the desert region.

Those willing to sell would not accept onfederate "graybacks," either, so the eneral was forced to divide his army nd press immediately on to Santa Fe, hich he occupied on 5 March. But here, o, Federal stores had been put to the rch, and Gen. Sibley and his men were ginning to feel the effects of a lack of pplies.

In early February, while still making eparations at Ft. Thorn, Gen. Sibley d dispatched Capt. Sherod Hunter and s 75 Arizona Rangers to occupy Tucson, e largest settlement in Arizona and a wn with strong secessionist sentiment. he captain and his men arrived on 28 bruary, one week after the battle of lverde, and commenced burning for- e and supplies they thought might be ed to sustain a Federal force invading izona from Ft. Yuma, just across the olorado River in California.

At the same time, a Confederate lieu- ant colonel had been dispatched by n. Sibley to negotiate with the Mexi- n governor of Sonora for rights to pur- ase supplies and land troops near the lf of California. Unfortunately for the onel, a newspaperman from the San ncisco *Bulletin* managed to hear of s mission and inform the Union com- nder of the Army of the Pacific.

Alarmed by this report, the command- er dispatched a gunboat which took posi- tion off the gulf, and forwarded a rather threatening letter to the governor of So- nora, who later assured him that he had made no arrangement with the Confeder- ate colonel for their use of his Mexican state.

Meanwhile, a relief force was being or- ganized at Ft. Yuma under the command of Col. James Carleton for the purpose of recapturing Arizona and joining Col. Canby in New Mexico. Realizing that Capt. Hunter's Rangers were in Tucson, Col. Carleton sent a small advance con- tingent to gather information on their ac- tivities. This Union force was eventually captured by Capt. Hunter, whereupon Col. Carleton sent out 272 men under a Capt. Calloway.

Capt. Hunter's men encountered a vanguard of this larger force at Stanwix Station, at which point a skirmish ensued, this being the "west- ernmost" action of the Civil War. A more lively battle occurred at Picacho Pass on 15 April, after which Capt. Hunter, ob- viously outnumbered, fell back on Tuc- son. On 4 May, 1862, Capt. Hunter was forced to retreat from Tucson, which was shortly occupied by Col. Carleton's "California column" on 20 May.

Upon reaching Tucson, Col. Carleton proclaimed a Federal Territory of Ari- zona, divided on a meridian line instead of the 34th Parallel used by the Confed- erates. On 8 June, he appointed himself military governor and on 21 June, he sent a large contingent of his force to join up with Col. Canby, who had, by that time, essentially eliminated the Con- federate threat to capture California and the Southwest.

After finding that the Federal stores had been destroyed in both Santa Fe and Albuquerque, Gen. Sibley had little op- tion but to attempt to take Ft. Union, where he anticipated meeting only mod- erate opposition. On 25 March, he dis- patched 600 men under a Maj. Pyron to hold Glorieta Pass, which would prevent reinforcement of Ft. Union by Col. Can- by's force at Ft. Craig.

Unknown to Gen. Sibley, Col. Slough, then commanding at Ft. Union, had dis- patched on the 22nd an advanced contin- gent of cavalry and infantry into the same area in preparation for a linkup with Col. Canby.

This force, 400 strong under Maj. John Chivington, formerly a preacher, arrived in the vicinity of Apache Canyon on the afternoon of 26 March, and was spotted immediately by Maj. Pyron's skirmish- ers. Thinking that the two to one odds in his favor would produce a stunning victory, Maj. Pyron brought up his en- tire force and formed a skirmish line to charge the Union cavalrymen marching toward him.

But Maj. Chivington was well aware of the Texan's proclivity to charge; using his 200 cavalrymen as a diversion, he stationed his infantry along the walls of the canyon, whereupon the Confederate skirmish line became caught in a tremen- dous cross fire.

As their ranks began to break, Maj. Chivington's cavalry charged the Con- federates, forcing them to retreat up the canyon mouth and regroup. The Confed- erates, expecting to face only New Mex- ico militiamen, had their first taste of the scrappy Pikes Peakers, and Maj. Pyron immediately sent for Col. W. R. Scurry and two regiments of reinforcements from Santa Fe. As Col. Scurry arrived on the 28th, so also did the Union's Col. Slough,



SCIENCE/SCOPE

A short-range air defense system has substantially exceeded reliability requirements set for it by the U.S. Army during intensive tests aimed at determining its fitness for battlefield and surveillance duty. U.S. ROLAND, one of the most advanced systems of its kind in the world, tracked and fired missiles at airborne test targets and withstood attempts to jam its electronics. With one test fire unit operating around the clock, the systems were required to average a specific number of operating hours between failures. They achieved over three and a half times the requirement. The mobile U.S. ROLAND provides a day-night, all-weather surveillance and defense capability against low-level, high-speed air attack. Hughes Aircraft Company and Boeing Aerospace built the system under license by Euromissile, a joint venture of SNI Aerospatiale of France and Messerschmitt-Boelkow-Blohm of West Germany.

The first secure, jam-resistant communications terminal designed to warn battlefield commanders of low-flying hostile aircraft has been developed by Hughes. The new Stand-Alone terminal displays radar information on close-in airborne threats using data relayed directly from E-3A AWACS surveillance aircraft. Currently, AWACS aircraft transmit surveillance data to permanent U.S. or NATO command installations. From there information is relayed, unprotected from jamming or interception, to one or more ground terminals before it reaches field commanders. Using Joint Tactical Information Distribution System (JTIDS) technology, the new terminal provides a full range of high-capacity data and voice communications. Displays can be scaled to furnish commanders with air situation information pertaining to their specific missions. The terminal can be transported easily and installed in a small shelter or command vehicle.

Day or night, the Laser Maverick air-to-surface missile is so accurate that it can be fired against targets close to friendly troops. The missile's seeker scans a broad area in front of the launching aircraft, looking for a reflected beam of laser energy being directed at a target by a designator device operated by ground-based troops or an aircraft crew. When the seeker detects and identifies this laser beam, it automatically locks on to the spot. After launch, the missile tracks the spot and guides itself to the target. Hughes produces the missile for the U.S. Marine Corps and U.S. Navy.

Military commanders can get a detailed picture of tactical situations and the current status of their resources with a new display terminal. The Hughes HMD-8000 has two display screens, one of which produces seven-color graphics with about twice the resolution of commercial TV. An innovative touch panel controlled by computer software lets an operator retrieve and display data very quickly. Commands that combine several complicated processes can be made in one touch. The system is built in modular form and is so flexible that it can be reconfigured to meet changing needs immediately. In an air defense command and control system it normally would display tactical air battle data and tactical air force resource data. As a battle grew and more information was needed, additional screens could be used to provide that data. Later the display screens could be returned to regular tasks.

To improve productivity, Hughes is ranking emerging technologies and determining how they can best be exploited to cut costs. Initial efforts of the industrial modernization incentive program are focused on three manufacturing areas: printed circuit cards, fabrication, and wiring systems. The first step is to identify key functions and how they interrelate. From this comes a framework to decide which emerging technologies offer the highest return on investment. Selected technology projects will be funded by the U.S. government or Hughes, depending on their nature. Each will share in cost savings.

For more information write to: P.O. Box 11205, Dept. 67-2, Marina del Rey, CA 90295

HUGHES
AIRCRAFT COMPANY

with the rest of his force from Ft. Union. The stage was set.

Just before noon on the 28th, both sides met in narrow Glorieta Pass, "a deep gorge, with a narrow wagon track running along the bottom, the ground rising precipitously on each side, with huge boulders and clumps of stunted cedars interspersed." For five hours, the battle raged from rock to rock, each side firing away at the other with small arms and mountain howitzers. Advance or retreat was nearly impossible for either side. In the evening, an armistice was called for attendance to the dead and wounded.

During the truce, Col. Scurry learned of a terrible setback; 300 cavalrymen, under Maj. Chivington, had sneaked around the Rebel lines and attacked the Confederate supply wagons in their rear, capturing 200 men, destroying food and munitions, as well as bayoneting nearly 600 horses and mules. This spelled disaster for the Confederates; using the time of the truce for cover, they retreated toward Santa Fe.

Up to that point, the Confederates had slowly been driving Col. Slough and his men from the field, and the Colorado contingent was in favor of chasing the retreating Rebels back into Santa Fe and capturing them. Col. Canby, however, had just gotten orders through to Col. Slough to withdraw to Ft. Union, as another Confederate move was anticipated across the Texas panhandle. Col. Slough grudgingly obeyed.

On 1 April, Col. Canby left Ft. Craig with 1,200 men bound for Albuquerque. Promoted to brigadier general, Canby arrived outside of Albuquerque on the 8th, with the intent of joining Col. Slough at Ft. Union. A feint toward Gen. Sibley's position in Albuquerque brought Col. Scurry and the remains of his Glorieta pass force down from Santa Fe. It appeared that another battle was shaping up outside Albuquerque.

The battle never took place, however. With the horses and supplies lost at the pass, and with no place in the territory to secure new provisions, Gen. Sibley realized that his troops could not withstand another major battle. The recruits and assistance that had been anticipated from the Mormons and New Mexicans never materialized, and the Federals had destroyed their stores before Gen. Sibley could capture them.

Col. Carleton and his California column were now marching across the Southwest to reinforce Gen. Canby, retaking



Col. James H. Carleton

the territory Col. Baylor had taken a year earlier. Unable to live off the desolate land and despondent over the setback at Glorieta Pass, Gen. Sibley decided to withdraw to Texas, if Gen. Canby would let him.

Gen. Sibley began his retreat on 12 April, under the watchful eyes of Gen. Canby, who followed him down the path of the Rio Grande from the east side of the river. Now reinforced by some of the Colorado soldiers from Ft. Union, Gen. Canby nonetheless refused to make contact with the ragtag column which trudged into plain view of his own eager men; charged with the protection of the territory, he would lose no more men in battle, preferring instead to let the desert do the work for him, along with the Apache.

Many of Gen. Canby's officers were outraged at his refusal to engage Gen. Sibley's weary column and capture it, insinuating that perhaps cowardice or a personal sentiment for Gen. Sibley had prevented aggressive action. But Gen. Canby, the prudent soldier, had other things to consider as commander of the Department of New Mexico.

Short of provisions to begin with, capturing Gen. Sibley's brigade would only leave him with more mouths to feed and wounded to care for, overtaxing his already limited facilities. Another battle would cost him more men and materiel, which might better be used against another potential invasion from Gen. Van Dorn in northern Texas. And, regardless of the disposition of the Confederates, he was still charged with defending the territory from raiding Apache and Comanche, among them the fierce Cochise.

By the third day of the retreat, Gen. Canby was assured that the Confederates would be leaving the territory. Suspending his pursuit, he returned to Ft. Craig, arriving there on 22 April. Gen. Sibley, in an attempt to avoid any contact with Gen. Canby's fresh, eager troops, had taken a 100-mile detour to the west in hopes of shaking Federal pursuers. This would take them through some of the worst country in the territory, as Gen. Canby well knew, and he had no intention of exposing his own men to such a pursuit.

Gen. Sibley had no guides, no roads and no supplies, and everything the men could not carry was discarded along the way. In some places, brush had to be cut with knives and machetes; sick and lame men were deserted along the way to the dreaded Dog Canyon Apache, who took many a scalp. In all, it was a horrible ten-day trek on barely five-day's rations, through some of the most inhospitable country in the world.

On 4 May, Gen. Sibley arrived at Ft. Bliss, his brigade still strung out 50 miles along the trail. Many who survived blamed him personally for the disaster; there was much talk that he should be court-martialed and hung.

Of the 3,700 men originally under his command, only 500 fell or were captured in battle, while 1,200 disappeared or died along the last 100 miles of his retreat across the desert. In his report to Richmond and to President Davis, Gen. Sibley wrote that, "except for its geographical position, the Territory of New Mexico is not worth a quarter of the blood and treasure expended in its conquest."

At no other time during the Civil War did the Confederacy again attempt to secure the strategic state of California. Quite possibly, it was the key to Union victory.

Had Gen. Sibley and his Army of New Mexico been successful, the entire outcome of the war might have been altered drastically.

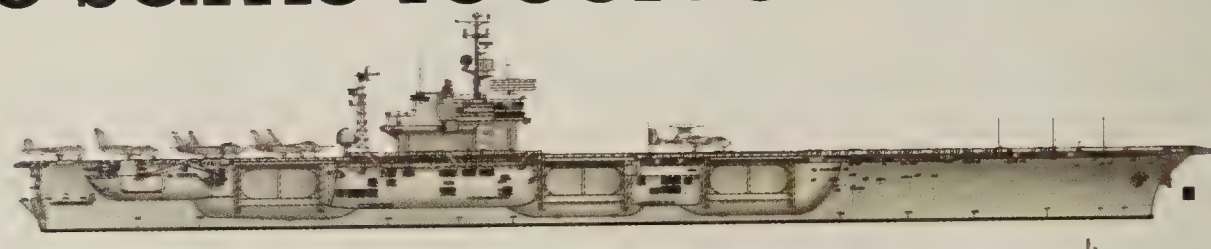
Had an imprudent commander such as Col. Slough been in charge of the Department of New Mexico instead of Gen. Canby, much needless fighting might have decimated Union strength in the territory and exhausted the already scarce supplies in the region.

The Southwest might well have been lost to the Confederacy, thus opening up a transnational gateway to the Pacific. Two separate nations might today exist where there is now but one.

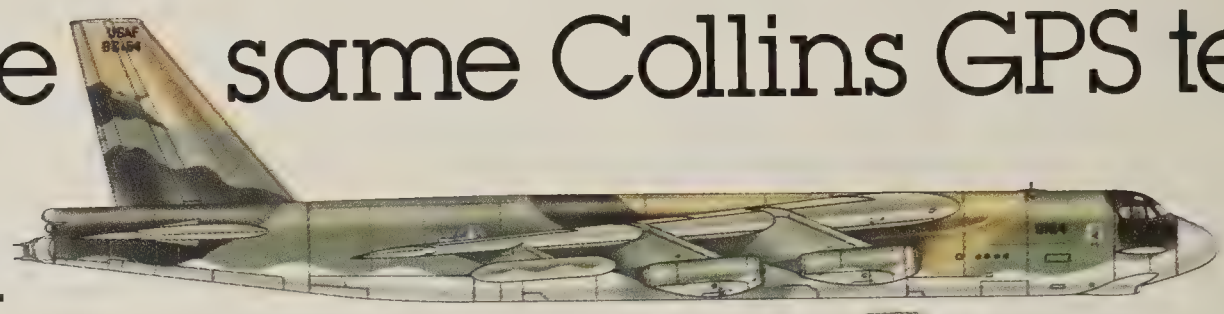
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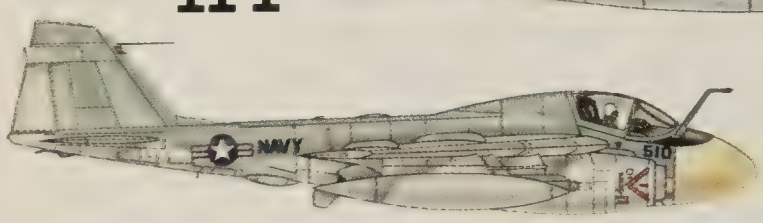
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The Forward Edge

BY MAJ. GEN. A. S. NEWMAN

Weather: Friend, Foe?

One of the most often quoted one-liners is, "Everybody talks about the weather, but nobody does anything about it." Like many truisms, of course, it is not completely correct. History records many instances where military commanders sed existing or predicted weather to their advantage. The converse is also true, that failures by command- s to guard against possible adverse weather under- ore the validity of George Santayana's observation, Those who cannot remember the past are condemned repeat it." Adolf Hitler's failure, for example, to re- ember what happened to Napoleon Bonaparte in his inter invasion of Russia condemned the Germans to peat it.

These sayings were on yellowed slips of paper in my d shoe box file, a heterogeneous collection of notes om my active-duty years, mostly pages pulled from ocket notebooks, but also *aide-mémoire* written on y fragment of paper handy when some ideas or ob- rvations for possible future reference came to mind. When I explored the box's contents further, two 4" 6" cards were found flat on the bottom, bearing the ading: Weather. The notes typed on those cards read:

- Germans predicted Dieppe raid—three good weath- days . . . heavy Allied casualties.
- Germans failed to predict Normandy, were ready end of May, but many on furlough, including Mar- al (Erwin) Rommel, when we landed 6 June, 1944, . defeat for them.
- Germans concentrated for U.S. air raid on Schwein- t—it was the only area with suitable weather at the e . . . losses for us.
- Weather aids defense—when tanks must keep to ds.
- Timing of German attack on Battle of the Bulge 44) decided by weather—good U.S. intelligence, by ne reasoning, could have predicted the timing . . . n troop dispositions could have indicated place.
- Forecasters give data—intelligence deduces.
- Ask for specific weather data—do not expect ather people to analyze overall situation . . . that's ur job.
- Timing of the tides—also surf, moon, cold and , snow and rain. . . .
- Keep plans flexible, subject to changes with the ather, but sometimes do not change—because of igencies of the situation." Illustration: complicated ather situation for Normandy invasion (and great ume of forces involved, with inherent secrecy prob- lem)—and our weather data, better than the Germans' —influenced Gen. (Dwight D.) Eisenhower's firm decision to keep 6 June, 1944, as D-Day.

The central theme of these notes requires no detailed explanation: never forget the weather angle in military operations.

One of the best ways to understand any principle is to experience some small occurrence that brings reality to it. Consider this personal lesson in "weather reality" for me during World War II.

When the 24th Infantry Division (Reinforced) landed in Tanahmerah Bay (as one arm of the two-pronged amphibious invasion of Hollandia, New Guinea, in April 1944), I was the division chief of staff. Surprise was complete as leading elements of the 21st Infantry landed at DePapre and drove up the trail through a mountain pass before meeting opposition. Since the trail was not yet usable by wheeled vehicles, primary



logistic supplies were hand-carried—a tenuous situation.

One morning soon after the landing, our division commanding general said to me, "OK, Red, I will stay in the command post today. You can go up and look around."

So I drafted a soldier to go along and we took off up the trail toward the airfield complex the Japanese had established in the Lake Sentani area. One thing we had to check was how that hand-carried supply system was working as the distance inland increased with our advance.

My two-man patrol paid little attention to the rain that turned the trail into a muddy quagmire, but it was a relief to get through the mountain pass and on level mud. The rain was turning some areas into swamps, and in one place we had to wade a muddy stream, between wide mud banks, of the flash runoff from the nearby mountains.

I don't know about my patrol companion, but it was increasingly apparent to me as we slogged along through the dense jungle on both sides of the trail that our flanks seemed kind of exposed.

Anyway, we eventually reached the 21st Infantry some ten miles inland, with the rain still falling. There were compelling reasons for me to return that day, so after talking briefly with the regimental commander, I started back, realizing my two-man reconnaissance had no time to lose if we were to get back inside our own command post perimeter before dark.

As we neared the muddy stream, the trail was ankle deep in rising water. In water nearly knee-deep, we came to what had been the stream—it was now a rushing torrent, boiling out of the jungle on one side of the trail and into it on the other.

Knowing I could take a shallow plunging dive, some strong swimming strokes and cross the swirling water, I stripped to my undershorts. I knew nothing of my companion's aquatic talents; thus I instructed him to wait while I crossed, then go back on the flooded trail and join the first unit he found.

I tied my jungle boots together and heaved them across into an eddy where tall weed tips just reached the water's surface. My jungle uniform, tied into a ball with the jacket sleeves, followed. Then I looked at my carbine (which could not get any wetter) and some curious, ingrained instinct for safeguarding government property must have taken over. Certainly reason, common sense or logic were missing when I did not heave the carbine over, too, but handed it to the other half of our patrol for safekeeping. I then swam across that rain-produced torrent to join my boots and wet uniform.

There seemed to be no point in putting on my soaked uniform and boots to hike the flooded trail so I sloshed along with them under my arm. And, in case you do not know, a one-man jungle patrol feels more than twice as lonely as a two-man patrol—especially when virtually naked and armed with only a sheath knife inside a soggy ball of jungle suit.

It was too late to do anything about the absence of my carbine, but I paused to dig out the knife so it would be more readily available, and continued sloshing along in my undershorts—eyes looking right, left and ahead, and wondering if any eyes were looking back.

When the chief of staff of the 24th Infantry Division (Reinforced) found himself—in his undershorts, knife in hand, eyes continuing to swivel right, left and ahead—he acquired a personal awareness that weather can affect military operations in uncounted ways. Also, that one way may be to induce delayed judgment in unnecessarily hurried adjustments to unexpected weather situations.

All is well that ends well, however. At the next carrying party bivouac on the trail I conscripted another soldier (with carbine) and in due course reported to the commander on my observations and actions.

The late Gen. Ben Harrell told me of an experience he had with another aspect of weather when, as a regimental commander in Italy during World War II, he was directed by telephone to make an immediate night attack. When he requested the order be reconsidered, his division commander asked why.

"Sir," Gen. Harrell replied, "if you send a man to the latrine without a flashlight, when he returns he can tell you why."

"I'll go myself," the division commander said, and then called off the attack—because heavy clouds had obscured the moon.

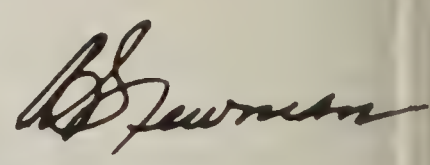
Some comments:

■ History is replete with weather lessons taught military commanders by Gens. Mud, Rain and Wind and Adms. Storm, Surf and Tide. Two of the best known case histories are the famous "divine wind" that destroyed the great Asian invasion fleet before it could reach Japan, and the fortuitous storm that, similarly, destroyed the Spanish Armada before it reached England.

■ Conversely, Gen. Douglas MacArthur used the extremely adverse time, surf and tide situation in the Inchon area of Korea to lull the North Koreans into a false sense of security. In fact, those adverse conditions, and the mind of a military genius, were the key to his dramatic victory at Inchon.

■ The Germans learned at Stalingrad that weather can intervene in unexpected ways, as when the intense cold rendered ineffective the fine optical gun sights in their modern tanks. In our nuclear-missile-electronic era, weather takes on new dimensions—including wind-blown radioactive fallout from possible nuclear action and the effect of sun spots on satellite communication systems.

■ Maybe somebody will research the subject and write a book on the theme, "Weather: what it can do to, and for, soldiers and military operations—in light of the past and looking to the future."



Article 15 Transfers

Noncommissioned officers in grades E6 and above must act before 31 October if they wish to have an Article 15 transferred from the performance portion to the restricted portion of their official military personnel file. The procedure applies only to NCOs who were in the grade E6 or above on 1 November, 1982; they should make their request to the Department of the Army suitability evaluation board (DASEB).

After 31 October, the NCO's only recourse will be to petition the Army board for the correction of military records.

The NCO should write directly to the DASEB, according to personnel officials, stating why he feels the intent of the nonjudicial punishment has been served and why it is in the Army's best interest to transfer the Article 15.

"Preferably, the letter should be accompanied by letters of support from the NCO's commander or supervisor and any other signed documents attesting to outstanding performance or professional development," noted one official.

The Bulletin Board

If a request is denied, a copy of the letter is entered on the performance portion of the file to show the selection board the NCO has made an attempt to improve his record. The board normally returns petitions without action unless at least one year has passed and one nonacademic evaluation has been received since the Article 15. Procedures for petitioning the DASEB and its address are in Army Regulation 27-10, paragraph 3-43.

ew Divisions Need Housing

Army Chief of Staff Gen. John A. Wickham Jr. has announced the service will delay assigning soldiers to two of its newly activated light infantry divisions, the 6th and the 10th, until adequate housing and other community facilities can be provided for the troops. The 6th Infantry Division is to be stationed at Fts. Richardson and Wainwright in Alaska and the 10th will be at Ft. Drum, N.Y. These posts are not yet equipped to handle the large influx of soldiers.

In a related development, reactivation of the 29th Infantry Division, another light division, has spurred building construction or renovation at several military installations in Maryland and Virginia. The 29th Infantry Division, renowned for its role in the American invasion of Omaha Beach on D-Day, 1944, will once again be composed of Maryland and Virginia National Guard units.

In support of the reactivated unit, new armories are to be built in Virginia at Ft. Belvoir (division headquarters), Ft. A. P. Hill and Byrd Field near Richmond, and in Maryland at Ft. Meade, Edgewood and Chestertown.

ecord Insurance Dividend Payout

The 3.4 million veterans who have kept their GI life insurance policies in force will share in a record annual dividend distribution for 1985 totaling $798.8 million, the Veterans Administration has announced. The high dividend was made possible because of lower death rates among policyholders and high interest earnings on the insurance funds' investments.

Each policyholder will receive the dividend in the month of the anniversary date of the individual policy. Payments will be made in the manner previously selected by the policyholder. Not affected by the dividend payout are most Vietnam-era veterans and later veterans who fall under different life insurance programs.

Family Fitness Handbook

The Army has published a new guidebook on physical fitness for soldiers and family members. The *Family Fitness Handbook*, Department of the Army pamphlet 350-21, covers a wide range of fitness subjects—determining the medical picture, developing individual and family exercise and sports programs, surveying diet and nutrition requirements, controlling weight, coping with stress, and recognizing special considerations for pregnant women, senior citizens and youth. Copies of the free fitness guide will be available to every Army family within the next few months through local installations.

Enlisted Information Number Changed

The toll-free number established a few months ago to aid enlisted soldiers seeking information on personnel matters has been changed. The old number, 1+800-225-9411, has been changed to 1+800-255-ARMY. The line connects the soldier with the information and assistance office in the Enlisted Personnel Management Directorate at the Army's Military Personnel Center.

Umbrella Ban to Continue

The Army has decided the umbrella will remain an unauthorized item for wear by men in uniform, although female soldiers will continue to be authorized its use. The decision follows a study by the Army clothing and equipment review board. Officials note the issue has generated arguments both pro and con but deny the study is a result of complaints against current policy.

Of all the services, only the Air Force permits its male personnel that protection.

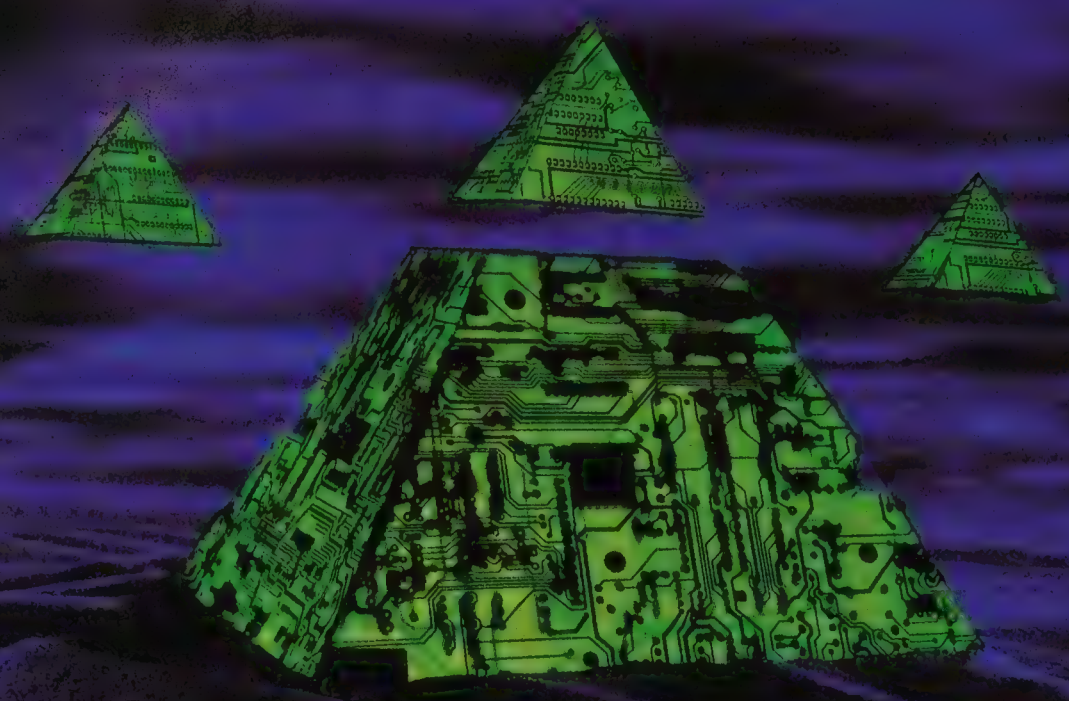
Survey Confirms PX Savings

An A. C. Nielsen survey commissioned by the Army and Air Force Exchange Service (AAFES) found that post exchange prices beat the civilian competition 88 percent of the time. The savings accruing to military shoppers ranged from 16.8 percent in the Midwest to 26.1 percent on the West Coast. The lowest category of savings was found in the food and beverage line—only 5.2 percent—with the highest in clothing and furnishings—35 percent.

The survey included 17 locations in the United States and compared the exchange prices of 317 brand-name items to the prices offered in civilian stores for the same goods. These included "volume leaders," infrequently purchased products such as watches, cameras and luggage, and items purchased regularly, such as clothing, toiletries and household staples. The survey compared exchange prices to those found in local stores, including items that were on sale at the time; it did not, however, include any exchange items on special sale nor did the surveyors factor in the savings accruing to AAFES patrons through exemption from local sales taxes.

The survey is commissioned annually to verify savings and to ensure that the AAFES system is meeting its goal of either achieving or exceeding an average 20-percent savings to its customers.

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MANAGING THE COURSE OF CHANGE

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Beretta to Replace the Colt .45 As Handgun of Armed Forces

The Colt M1911A1 .45-caliber pistol d no longer be the standard sidearm of S. forces. The Army, acting as execue agent for the Department of Defense oD), has announced that the Italian etta 92SB-F 9-mm pistol won the armed ces handgun competition.

A five-year contract for 315,930 of the apons will be awarded to Beretta U.S.A. rp. of Accokeek, Md., pending reson of legal challenges brought by two

News Call

npeting firms. The contract is reporty worth $56.4 million. This works out bout $179 a pistol; comparable qual- weapons of this type typically cost 0-$600 when sold commercially, so etta's low bid evidently carries a very profit margin, although the pricing cts of firearms import restrictions and ies since 1968 account for part of the erence.

eretta will be obligated to manufac- at least 134,000 of the new pistols in United States, beginning no later than end of the third year of production. firm's current plans easily meet this edule. The first year's production of 30 guns will be carried out in Italy, the second annual batch of 57,000 e assembled and tested at the Mary- plant from parts made in Italy.

he balance of 206,000 will be made ie Maryland facility, which is expect- o add about 300 workers and absorb $15 million in U.S.-derived capital investment. Under the agreement, Beretta must also purchase all raw materials in the United States.

The Beretta was one of only two candidates to satisfactorily complete a rigorous test program designed to verify both performance and durability under normal and adverse environmental conditions. The other finalist was the P226 from the Swiss-German firm of SIG-Sauer. Also in the competition were models from Colt Industries, Smith & Wesson, Walther Co. and Heckler & Koch Inc., both of West Germany, Steyr-Daimler-Puch A.G. of Austria and Fabrique Nationale Herstal S.A. of Belgium.

The candidate weapons were tested at three different locations. At Aberdeen Proving Ground, Md., the pistols performed under adverse conditions as well as extremes of heat and cold. Ballistic tests were also performed at Aberdeen. At the NATO North American Regional Test Center, Ft. Dix, N.J., the guns were evaluated for durability to determine whether they could meet the required 5,000-round service life. At Ft. Benning, Ga., representatives from each service fired the weapons to determine hit probability and reliability.

According to Army officials, "The Beretta was by far the clear winner, meeting or exceeding all of the requirements, and at the lowest cost." In earlier tests, conducted between 1977-1980, the Beretta was also the favorite, averaging 2,000 rounds fired without a malfunction.

The 92SB-F weighs 41 ounces with its loaded 15-round staggered-column magazine. The weapon is deemed safer and more acccurate than Colt's .45-caliber pistol, as well as being lighter and easier to handle. Additionally, the 9-mm Beretta is compatible with the handguns and ammunition used by other NATO nations, a key consideration in DoD's decision to change calibers.

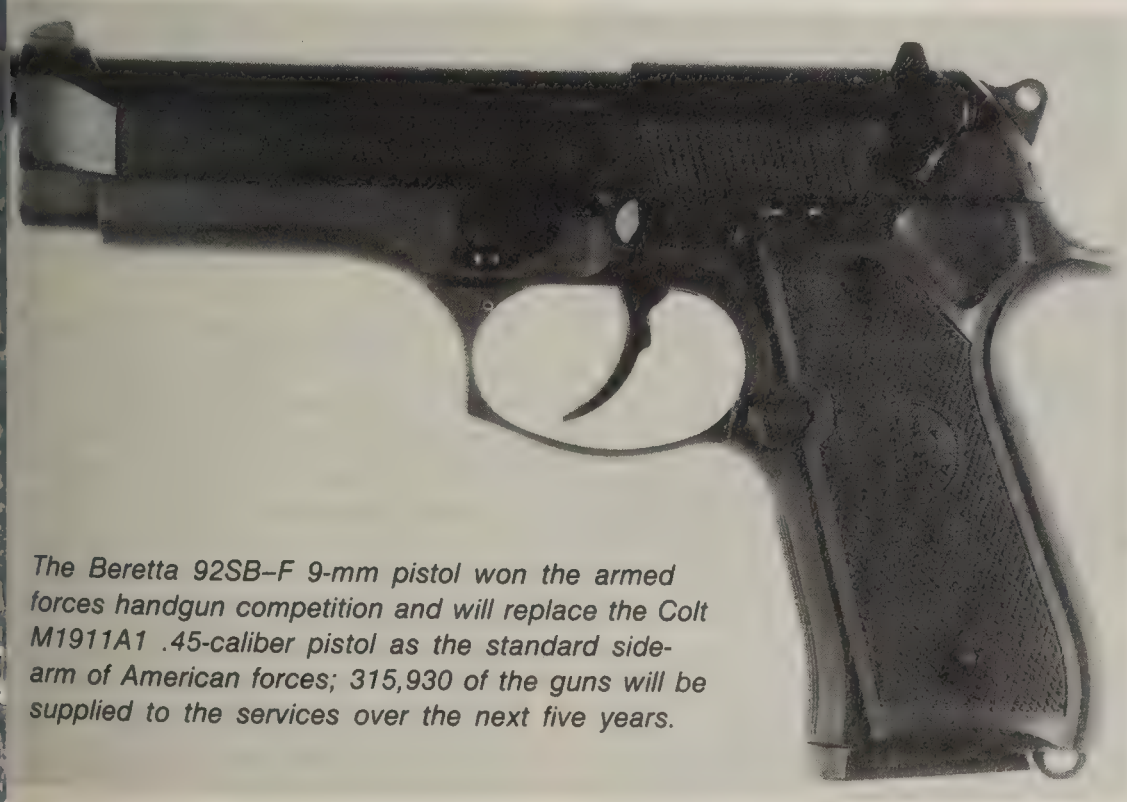
Colt's M1911A1 .45-caliber pistol was adopted by American forces before World War I, in response to complaints about the lack of stopping power of the .38-caliber revolvers then standard. Since then the weapon has undergone only minor modification.

Shortly after World War II and again in the 1950s, the services considered replacing the Colt sidearm with a lighter, milder kicking gun, but the plans were abandoned due to the weapon's low priority among defense projects of the time.

The Colt was not seriously challenged again until 1978, when the House Appropriations Committee noted the alarming proliferation of handguns and ammunition among the services. Shortly thereafter, the Joint Service Small Arms Program (JSSAP) was established to pool the resources of all the services and eliminate duplication during the development and procurement of small arms. Tests already under way on 9-mm pistols were continued with the thought of making one of them the Colt's replacement.

After years of controversy over whether the services needed a replacement for the Colt .45, Congress approved funds for the change last year. Although all testing on the 9-mm weapons was completed last September, the announcement of a winner was delayed because of legal challenges brought by Smith & Wesson and Heckler & Koch. Both firms felt they were unfairly eliminated from competition during the source selection process. Army officials finally made the announcement in an effort to resolve the dispute.

As the 9-mm Berettas become available, they will be issued to most military personnel authorized personal handguns. However, a small number of people who require a concealable sidearm, such as criminal investigators and military intelligence personnel, will continue to be issued short-barreled .38-caliber pistols.



The Beretta 92SB-F 9-mm pistol won the armed forces handgun competition and will replace the Colt M1911A1 .45-caliber pistol as the standard sidearm of American forces; 315,930 of the guns will be supplied to the services over the next five years.

Missile to Qualify on UH-60s. The Army has awarded Sikorsky Aircraft, a division of United Technologies, a $7.9 million contract to qualify the Hellfire antiarmor missile on its UH-60A Blackhawk transport helicopters. The program, expected to run for 14 months, will include test firings of the missile, which is built by Rockwell International Corp.

As part of the program, Sikorsky has awarded Rockwell a $3.5 million contract to develop and qualify Hellfire missile equipment for the Blackhawk and

verify performance. In 1982, Sikorsky demonstrated the feasibility of the arrangement when it test-fired three Hellfires from the aircraft.

The Hellfire pods are carried on the UH-60's Sikorsky-developed external stores support system (ESSS). The ESSS consists of a kit of removable pylons which mount on both sides of the aircraft's fuselage extending the aircraft's capabilities by permitting it to carry missiles, external fuel tanks, mine dispensers and a variety of other equipment. The system can be installed in less than 40 minutes by four persons. All Blackhawks currently manufactured are equipped with fixtures for mounting the ESSS pylons.

New Cannon for M113? Hughes Helicopters Inc., a subsidiary of McDonnell Douglas Corp., is developing a 30-mm automatic self-powered (ASP) cannon to increase the firepower capabilities of the Army's M113 armored personnel carriers. This lightweight gas-powered gun would replace the .50-caliber machine guns now being used on the M113s.

The gun fires between 450–500 rounds a minute and has an independent ordnance system which requires no cradle mounting. This feature allows the gun to be removed from the M113 and placed on a variety of existing light vehicles. It can also be used with the M3 heavy machine-gun tripod for dismounted combat.

MLRS Capability to Increase. The Army Missile Command has awarded Martin Marietta Aerospace, Orlando, Fla., and three European firms a $99.8 million contract to develop a terminally guided warhead (TGW) that will add all-weather antiarmor capability to the multiple-launch rocket system (MLRS).

The program seeks to develop a warhead for the unguided MLRS rocket that will dispense armor-piercing submunitions, guided in the final phase of their horizontal search trajectories by millimeter-wave radar seekers, which provide the all-weather capability needed in Europe.

The companies involved in the program represent four of the five nations —the United States, France, the United Kingdom and West Germany—that have signed a memorandum of understanding concerning shared production, deployment and further development of the MLRS system, for which LTV Aerospace and Defense Co. is the prime contractor. Italy joined the pact at a later date.

The contract will be administered by MDTT Inc. as a wholly owned joint-venture company of the four firms: Martin Marietta; Diehl GmbH & Co. (West Germany); THORN EMI Electronics Ltd (United Kingdom); and Thomson Brandt Armements (France).

Two thirds of the value of the work will be assigned to the European partners in a manner that will minimize cash flow out of each country while facilitating the exchange of technology. Each nation will have a role in development of the all-important seeker. If the Army picks up options for the second and third phases of the contract, its total value could exceed $350 million.

GENERAL OFFICER CHANGES



Gen. J.R. Galvin from CG, VII Corps, USAREUR, to CINC, USSOUTHCOM.



Maj. Gen. F.F. Ledford Jr. from CG, LAMC, PSF, to CG, 7th MEDCOM & C-Surg, USAREUR/Seventh USA.

Brigadier Generals: **Merle Freitag** from Cdr, DCOM, 101st Abn. Div. (AASLT), to DR&M, ODCSLOG; **B.J. Stalcup** from Cdr, AMSC, 19th SUPCOM, WK, to DCS/SMT, AMC.

■ ***LAMC, PSF***—*Letterman Army Medical Center, Presidio of San Francisco;* ***DCOM***—*Division Support Command;* ***DR&M***—*Director of Resources & Management;* ***AMSC, 19th SUPCOM, WK***—*U.S. Army Materiel Support Center, 19th Support Command, Waegwan, Korea;* ***DCS/SMT***—*Deputy Chief of Staff for Supply, Maintenance and Transportation.*



This 40-mm guided projectile, developed by Ford Aerospace & Communications Corp. under an Air Force contract, was successfully test-fired with a course change in flight at the firm's facilities near San Juan Capistrano, Calif. The projectile is commanded by an on-board computer to maneuver significantly off its initial trajectory. The rectangular opening on the ogive is one of the two jet ports that provide in-flight guidance.

Doughboy Award Nominations. The Army's Military Personnel Center (MILPERCEN) is accepting nominations for the 1985 Distinguished Doughboy Award. The award is presented each year to an individual who has been instrumental in improving the morale and welfare of the infantryman. This year's award will be presented on 9 November at the Infantry Ball in Washington, D.C.

The following criteria are used to select the award recipient:

- The award is not presented posthumously except when the recipient dies after being selected.
- Active-duty military members are not eligible for the award.
- Civilian executives who are active in the defense establishment are not eligible.
- The recipient cannot be directly affiliated with an organization which has contracts with the Department of Defense.
- The recipient does not have to be present to accept the award.
- Final selection will be made by the commander of the Army Infantry Center and School, Ft. Benning, Ga.

The award was established in 19 Past recipients include Bob Hope, Ross Perot, Bill Mauldin, retired Army Maj. Gen. (and ARMY columnist) Aubrey S. Newman and former Sen. John Tower (R-Tex.). Any infantryman may nominate a candidate for the award. Nominations should be sent to MILPERCEN ATTN: DAPC-OPE-I (Capt. Sittnick) 200 Stovall St., Alexandria, Va. 22332-0400.

New Forklifts Being Developed. Engineers at the Army's Belvoir Research and Development Center, Ft. Belvoir, Va., are testing the suitability of diesel-powered warehouse forklift trucks as replacements for gasoline and electric battery-powered vehicles in an effort to save fuel, money and manpower hours. Diesel-powered forklift trucks of 4,000 to 6,000 pounds capacity have been tested at the research center.

Because of the diesel engine's durability, lower maintenance requirements and high fuel efficiency, it is frequently



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sen over gasoline engines and is the primary power source in most military and large or high-mileage industrial equipment. Diesel engines are now used in the larger military forklift trucks.

The small warehouse trucks have become available with diesel power only in the past few years. Diesel engines procured by the military must meet stringent emission standards to allow use of the forklifts in areas with low ventilation such as warehouses and ammunition storage magazines. The military advantages of the diesel-powered trucks are improved readiness due to a reduced downtime and better ability to respond quickly in combat support operations.

Handicapped Employee of 1984. The Army has named Wilmot D. Shaw, a resources management supervisor at Ft. Jackson, S.C., its handicapped employee of the year for 1984. As such, Mr. Shaw also qualifies as one of three co-winners of the Department of Defense handicapped employee of the year competition and one of ten co-winners for the federal handicapped employee of the year competition.

While serving as a supervisory industrial engineering technician last year, Mr. Shaw is credited with helping to develop projects which saved the federal government in excess of $1 million.

Changes in DIVAD Studied. The Army is considering altering its troubled DIVAD (division air defense) antiaircraft gun to a gun-missile combination in an effort to increase the weapon's defensive capabilities. Army representatives are consulting with Ford Aerospace & Communications Corp., the manufacturer of the gun, to determine the feasibility of retrofitting the DIVAD with launchers for the popular Stinger antiaircraft missile.

The DIVAD, known as the Sergeant York, consists of two 40-mm guns mounted on a tracked chassis and includes an integrated fire control radar system. The weapon has a horizontal range of over 4,000 meters for ground targets and a slant range of well over 3,000 meters for aerial targets. The Stinger antiaircraft missile has a range of over 5,000 meters.

The DIVAD study comes at a time when the weapon is undergoing intense congressional criticism because of high costs, production delays and questionable performance during testing. The program has cost $1.9 billion to date, but more important, it has failed to convince Congress of its effectiveness during extensive testing.

In 1979, Ford Aerospace's competitor for the DIVAD contract, General Dynamics Corp., was prepared to demonstrate its prototype 35-mm gun system with Stinger missile launchers included, but was prohibited from entering this version into competition because the proposal called for a "guns only" weapon. Ford Aerospace subsequently won the contract and went into production in 1982. The weapons were to be first deployed this year, but production is being maintained at only minimal levels pending the outcome, this summer, of an extra round of testing mandated by DoD.

Field Mess System Improved. The Army has announced plans to provide soldiers in the field with two hot meals and one meal-ready-to-eat (MRE) a day. Chief of Staff Gen. John A. Wickham Jr. approved the new combat field feeding system after reviewing several other recommendations.

The decision to staff and equip the Army to support the system will allow a reduction of personnel in military occupational specialty 94B, food service specialist. The Army will eliminate 3,447 of these positions gradually during the next few years. The reduction will result from consolidating field kitchens at battalion level, which means doing away with company field kitchens and going to tray rations with disposable paper products. The move will require contracting of some positions to garrison dining facilities.

Improvements in the MRE based on recommendations from soldiers and commanders were also announced. The MRE began replacing the traditional C-ration last year. Improvements in the MRE include the addition of a variety of cold beverage flavorings, the increase of five entree portions from five to eight ounces, the elimination of two dehydrated entrees and the addition of a breakfast entree.

Copperhead Goes to Europe. The M712 Copperhead 155-mm guided projectile is being fielded in Europe following its deployment to U.S.-based units and introduction to service schools in this country.

In addition to receiving the cannon-launched antiarmor projectiles, troops in Europe will be given total Copperhead logistics support. This includes training rounds, extractors, repair parts and technical manuals. Also, the laser designator that is part of the Copperhead system will get similar logistics support.

Recent tests showed marked improvement in the accuracy of production projectiles. During operational tests at Ft. Riley, Kan., Copperheads hit their targets more than 80 percent of the time under realistic European-type weather conditions which included rain and wind gusts of up to 50 miles per hour. In tests of four production lots late last year, every round pulled at random and fired scored a hit.

ictory More Luck than Strategy

First-rate' Account of World War II in the Pacific

gle Against the Sun: The American War with Japan. *Ronald H. Spector. The Free Press, 866 Third Ave., New York, N.Y. 10022. 589 pages; illustrations; notes; bibliography; $24.95*

By Col. Stanley L. Falk
U.S. Army Reserve, retired

Books

he United States went to war with Japan in 1941 with mixed and faulty rceptions of its enemy. We thus failed comprehend fully Japanese motives, jectives, means and methods. In some asure due to these misconceptions, Amern strategy to defeat Japan emerged as blend of improvisation, service paro-

alism and opportunism. Our victory the Pacific was more a matter of suior material resources and outstand- intelligence than the result of a care- and clever strategy designed for maxim efficiency and effect.

he Japanese, for their part, while pers possessing a somewhat better under- nding of relative strengths and conflict- objectives in the Pacific, also failed grasp the realities of the situation be- them. They thus embarked on a war desperation, using a strategy of calcud risk, limited objectives and reckless e. They sealed their fate by overesti- ing their own capabilities and badly gauging the potential power and denination of their enemies.

hese contrasts are well reflected in ald H. Spector's outstanding new act of World War II in the Pacific, an ressive work of synthesis, research, writing and provocative interpreta- . His is not the first effort to com- s that great conflict into a single vol- , but it is clearly the best.

Mr. Spector's approach is refreshingly ghtforward and to the point. He dees strategy, logistics, intelligence, cs and the daily life of soldiers and rs. He provides excellent illustrative unts of how and why battles were ht and the impact of victory and de- He also has the good sense and lity grace to avoid repetitive detail, ningless anecdotes and sensational sations.

e thus succeeds in separating the imant from the trivial, while nonetheproviding a clear and balanced picof the course of the war, the personalities involved, and the ways and means adopted by each side. Only the absence of adequate maps spoils the overall effect.



Soldiers of the 7th Infantry Division employ a 37-mm antitank gun against a Japanese pillbox on Kwajalein atoll, January 1944; the island had been saturated earlier by U.S. bombardment.

While the book is a careful, objective piece of scholarship, its author is not without an active imagination and strong opinions. He does not hesitate to criticize individuals: Gen. Douglas MacArthur and Adms. Isoroku Yamamoto, Chester W. Nimitz, Raymond A. Spruance and William F. Halsey are among those whose actions are questioned.

The author brings his own forceful views to bear on his analysis of American strategy. Others have described the curious bureaucratic and organizational rivalries on which the two-pronged American Pacific offensive was based, and the problems that subsequently arose.

Mr. Spector, however, carries the argument much further and offers some interesting worst-case speculation. At times, he argues, it was only luck or Japanese ineptitude that allowed the United States to overcome the weakness of a divided Pacific command.

He also suggests that Japanese strategists blundered in not continuing their offensive in mid-1942, when Allied fortunes in the Pacific were still in disarray and the United States was incapable of mounting an early major counterblow. Here he seems somewhat less convincing.

Despite whatever tactical superiority the Japanese still possessed after Midway, they lacked sufficient fuel, shipping and other resources to sustain an offensive war. The strain of further advances, indeed, instead of prolonging the war, might well have brought even closer the inevitable Japanese defeat.

Such speculation is nevertheless stimulating. Along with other thoughtful and imaginative points raised by the author, it serves to enliven and enrich a skillful narrative. The end result is first-rate military history.

COL. STANLEY L. FALK, U.S. Army Reserve, retired, Ph.D., was formerly deputy chief historian for Southeast Asia at the U.S. Army Center of Military History and is the author of five books on World War II in the Pacific.

To Avoid Use in War

Nuclear Curbs In Peacetime

Alliance Security: NATO and the No First-Use Question. *John D. Steinbruner and Leon V. Sigal, eds. The Brookings Institution, 1775 Massachusetts Ave., N.W., Washington, D.C. 20036. 222 pages; notes; index; $28.95.*

The Bomb and European Security. *Guido Vigeveno. C. Hurst & Co., London, England WC2E 8JT. 131 pages; notes; illustrations; $12.95 cloth; $6.95 paper.*

The Command and Control of Nuclear Forces. *Paul Bracken. Yale University Press, New Haven, Conn. 06520. 252 pages; notes; index; $19.95.*

By Col. William O. Staudenmaier

One of the major strategic issues facing the current generation of military strategists is the need to come to grips with the reality of nuclear parity between the superpowers. Some defense analysts like Samuel Huntington interpret nuclear parity as signaling a growth in the importance of conventional deterrence. Others see a need to bolster defensive systems like ballistic missile defense and civil defense in an effort to restore nuclear deterrence to preeminence.

Still others, like the American "Gang of Four" (McGeorge Bundy, George F. Kennan, Robert S. McNamara and Gerard Smith), have called into question the entire basis of flexible response by argu-

ing that the United States should consider adopting a policy of "no first use" of theater nuclear weapons, which, of course, would challenge the U.S. nuclear guarantee to NATO. The three volumes under review deal in one way or another with NATO's nuclear posture as well as nuclear strategy in its broader context.

The Steinbruner and Sigal book attacks the no first use issue most directly. Beginning with the perception that no U.S. President would authorize the first use of nuclear weapons in Europe, scholars from both sides of the Atlantic examine the historical, strategic, political, doctrinal and force structure implications of the use of nuclear weapons in Europe. The distinguished authors of this volume argue that NATO can develop a conventional defense; that even if it could not bring a Soviet invasion to an immediate halt, it could, at least, ensure that nuclear weapons would not be used early by NATO commanders.

However, because of strategic disagreements which stem from fundamental divergences in political perspectives and national interests between the European and U.S. members of NATO, the authors stop short of advocating the implementation of a no first use policy immediately; but they do find utility in reducing NATO's reliance on short-range battlefield nuclear weapons and a concomitant buildup of the allied conventional defense. These, and other recommended changes, would have to be carried out in such a way that the new policies and strategies reassured both our allies and the Warsaw Pact.

Guido Vigeveno's book is valuable for the survey provided of nuclear issues as they relate to strategic deterrence. It briefly examines the historical antecedents of both U.S. and Soviet nuclear strategy and assesses the conventional and nuclear balance in central Europe. Finally, the author reviews the neutron bomb decision and the "dual track" decision in 1979 to pursue the stationing of modern long-range nuclear missiles in Europe while simultaneously seeking an arms control agreement with the Soviet Union to limit theater nuclear missiles in Europe. The book has an understandable European flavor.

Paul Bracken's *The Command and Control of Nuclear Forces*, is certainly the most creative of the books under consideration and probably will be the most enduring as well. Mr. Bracken's purpose is to examine how the superpowers control their nuclear forces in peacetime and during war. How the fusion of intelligence and warning systems, the centralization of war plans and the threat to destroy nuclear command centers has led to crisis instability in general and to a nuclear "hair trigger" is logically developed and adequately documented.

As a service to readers interested in obtaining books reviewed in *ARMY*, the mailing address of the publisher is included in the head notes for each main review and Varied Fare item. Readers are reminded that neither *ARMY* nor AUSA has the facilities to order books for them or to handle the related correspondence; inquiries and orders must be directed to the publisher.

The Editors

In searching for a way out of the nuclear predicament, the author provides three arms control initiatives that could guide both superpowers away from the nuclear precipice. First, prohibit the fielding of short-time-of-flight weapons that would pose a danger to national command centers. Second, adopt, unilaterally, if necessary, a policy of no first use of nuclear arms against national command centers.

These two initiatives would prevent "decapitating" strikes that could lead to battle fragmentation of nuclear comman and control, and to loss of control du ing an intense nuclear crisis. The thir initiative would encourage both sides t identify shortcomings in the other's abi ity to control nuclear weapons in th hope that this would lead to more effe tive control of nuclear forces to the ben fit of both superpowers. In this way, th nuclear forces of both sides would b placed under more positive operation control—and control, after all, is the e sence of strategy.

Together, these three books should b of interest to anyone seriously interes ed in understanding the central strateg problem of our generation: how to co trol nuclear weapons in peacetime in o der to avoid their use during war.

COL. WILLIAM O. STAUDENMAIER director of strategy at the Center f Land Warfare, Army War College, Ca lisle Barracks, Pa.

Over 1,400 Miles of Destruction

Stalin's 'Soviet Style of War'

The Road to Berlin: Continuing the History of Stalin's War with Germany. *John Erickson. Westview Press, 5500 Central Ave., Boulder, Colo. 80301. 896 pages; illustrations; maps; bibliography; index; $42.50.*

By Earl F. Ziemke



On 21 November, 1942, Adolf Hitler, as commander in chief of the German Army, ordered the German Sixth Army to keep its hold on the Volga River at Stalingrad, come what may. Soviet armored spearheads were closing around the city on the west, and the next day Gen. Friedrich Paulus flew into the pocket to lead his army to its destruction. Here Professor Erickson begins *The Road to Berlin*, taking up from the point at which his previous volume, *The Road to Stalingrad* (published in 1975) ended.

The metaphorical "road" to Berlin was long, over 1,400 miles. On a front reaching initially from the Caucasus Mountains to the Barents Sea, millions of Soviet and German troops were continually engaged. The only pauses came during the three or four weeks each spring when the thaw made the terrain impassable for both sides. What would have been major battles anywhere else became lost in a succession of breakthroughs, retreats and recoveries.

Of the many fought, relatively few battles stand out: Stalingrad, Kursk, the destruction of the German Army Group Center in July 1944, and, of course, the for Berlin. The sieges of Budapest a Königsberg and the Warsaw uprising pr vide highlights of another sort, as do t Big Three conferences at Tehran and Y ta. In the summer of 1944, the "road" vided at the rim of the Carpathian Mou tains, and henceforth a southern bran ran through Romania and Hungary t ward Vienna, with spurs into Bulga and Yugoslavia.

Subsequently, it passed through all the capital cities of eastern and southea ern Europe (except Athens), and it c not, in fact, terminate at Berlin but Prague, when Soviet army groups comi off the northern and southern branch met there at noon on 9 May, 1945, tw days after the German surrender.

As the subtitle, *Stalin's War with G many* implies, the Soviet–German co flict was a war within a war. In the We the conflict's separateness from Wo War II has been attributed to Soviet cretiveness and geographical isolatio The Soviets contend that political a social characteristics set "The Great I

otic War" apart from and militarily d morally above World War II.

The author sees the "singularity of [Jo-] Stalin's style in operating the [Soviet] stem" as the war's differentiating fea- e and his book, therefore, as being marily concerned with "the properties the man [Stalin] and the performance the system—both operating under max- um stress." The relationship between man and the system, he infers, creat- a distinctive "Soviet style of war" that sists to the present day.

Professor Erickson works mainly from Soviet war literature. He knows his y around the river of histories, mem- s and articles that has flooded from viet presses in the years since Stalin's th better than anyone outside the So- t Union. Consequently, his account is authentic as can be written from the ilable Soviet sources, which makes it sible to follow the war's tactical and rational course in elaborate and ac- ate detail, to retrace the "road" al- st inch by inch.

The book is no light entertainment, vever. It demands an earnest reader- , whether general or specialist, and it eth to" and "taketh away from" both. sence of footnotes and spirited writing duce a smooth narrative flow; on the er hand, chapters 100 pages long with subheadings discourage casual perus-

he account is direct and factual, but Soviet-style facts on which it is based iantly illuminate matters of small con- ience and frequently obscure or dis- those impinging on the stringent So- conceptions of prestige, national se- ty and politics. For instance, the So- figure of ten million Germans killed he Eastern Front conflicts strikingly the non-Soviet count, which puts man military deaths on all fronts at over a third of that number.

pecialists will find the 200 pages of ences and bibliography the author s to as his "second book" at least as thwhile as the main text. In it, the ces used are listed and commented y the chapter, and the chapters are ivided; but to pursue any single point the text will generally require search- n dozens of places.

nce the store of information about var the Soviet Union could release is om being exhausted, one hopes Pro- r Erickson means to continue *Sta- War with Germany* even though the d" has reached its end. It is a war— this is a book—worth studying.

L F. ZIEMKE, Ph.D., former super- ory historian in the Army's Center Military History, is a professor of tory at the University of Georgia, hens.

Varied Fare

Options of Command. *Col. Trevor N. Dupuy, U.S. Army, retired. Hippocrene Books, 171 Madison Ave., New York, N.Y. 10016. 303 pages; maps; $19.95.*

A study of ten important battles of World War II—the 1940 Ardennes campaign, the battle of Britain, Barbarossa, Moscow, Pearl Harbor, Midway, Stalingrad, Rome, the Normandy landings and the Bulge—with a kicker: what might have happened if a principal commander had at a time of crisis made a different decision and brought the action to a different conclusion? "Might have beens" are difficult to play with, but Col. Dupuy considers his work to be an instructive and enjoyable game. He is scrupulously careful in altering the scenarios, and, in manipulating history, he is primarily concerned with finding useful lessons.

The Pusan Perimeter: Korea, 1950. *Edwin P. Hoyt. Stein & Day Publishers, Scarborough House, Briarcliff Manor, N.Y. 10510. 310 pages; illustrations; index; $19.95.*

A story of the first three months of the war in Korea by a veteran reporter and writer.

Horrocks: The General Who Led From the Front. *Philip Warner. Hamish Hamilton, London, distributed by David & Charles Inc., North Pomfret, Vt. 05053. 195 pages; photographs; maps; appendices; bibliography; index; $19.95.*

An intimate and effective biography of Lt. Gen. Sir Brian Horrocks, one of the most successful World War II corps commanders in the British—or any Allied—Army. Commanding four different large formations (9th, 10th, 13th and 30th corps), he was a protégé of and a major contributor to the successful North African campaigns of Field Marshal Sir Bernard L. Montgomery. He had the common touch with field soldiers and could often be found in the front lines—his tactical headquarters throughout the war was an unarmed tank. Seriously wounded at the moment of victory in Tunisia, Gen. Horrocks recovered in time to lead 30th Corps in northwest Europe during 1944–45, where he was much liked and admired by American comrades-in-arms.

This biography by one of Britain's most experienced military historians also covers Gen. Horrocks's postwar life, in which he has had great success as a writer, editor and television broadcaster in the field of military affairs.



A Special Breed of Man. *Ed Edell. Ranger Associates Inc., 600 Washington Ct., Guilderland, N.Y. 12084. 233 pages; $3.95.*

This novel about the Vietnam war features the experiences of a Special Forces sergeant and offers good detail about wartime military life. It is well researched by a writer with a broad background in military affairs.

German Military Intelligence in World War II: The Abwehr. *Lauran Paine. Stein & Day Publishers, Scarborough House, Briarcliff Manor, N.Y. 10510. 199 pages; illustrations; index; $16.95.*

A history of how the *Abwehr* served and failed to serve Adolf Hitler's Germany.

History of the United States Army (enlarged edition). *Russell F. Weigley. Indiana University Press, Tenth & Morton Sts., Bloomington, Ind. 47405. 730 pages; notes; appendix; index; $10.95.*

This thoughtful, perceptive study (originally published in 1967) by an outstanding American military historian is now available in paperback, with an additional broad chapter that discusses Vietnam and the years through 1983. Professor Weigley's impressive work is essentially the story of two armies: the professional regular Army and an army of citizen militia, National Guard, reserves and draftees. Coverage is comprehensive, but the book is primarily institutional history, focusing less on battles and campaigns than on the Army's means and methods of making war. Always stimulating, sometimes controversial, the author's analysis and conclusions deserve serious attention.

The Defense of the West: Strategic and European Security Issues Reappraised. *Robert Kennedy and John M. Weinstein, eds. Westview Press, 5500 Central Ave., Boulder, Colo. 80301. 451 pages; index; $32 hardcover, $14.95 paper.*

Robert Kennedy, professor of military strategy in the Department of National Security at the Army War College, and John M. Weinstein, a strategic nuclear forces analyst on the Army General Staff, have written half of the studies concerned with the strategic balance between the United States and the Soviet Union, the relationship between military forces and deterrence, and the changing interactions of American and Soviet policies, as well as the defense issues within Europe—conventional and theater nuclear forces, arms control and frictions within the alliance.

ALLISON AND GARRETT. THE LHX TEA

A wealth of small engine technology has been funded by both the Army and the Air Force in recent years. With the production of LHX, two of America's most respected turbine engine manufacturers stand ready to turn those investment dollars into reliable horsepower for the Army. Paying back knowledge gained from success in current military engine programs.

Together, Allison and Garrett propose to develop the low-risk Advanced Technology Engine ATE109 for LHX, then compete for its production.

Garrett, with experience gained from over 50,000 aircraft and ground turbine engines, is developing the Advanced F109 Air Force Trainer Engine. The first engine planned for inventory to meet the strict Engine Structural Integrity Program (ENSIP). It demonstrates the power section technology that will be used in the ATE109. This ensures the Army of an LHX engi that offers advanced durability ar high performance. At the lowest possible risk.

Allison's production base incor rates over 20,000 helicopter engi delivered, including 5,000 engine the U.S. Army inventory alone. Th have just completed a program o the Advanced Technology Demo strator Engine (ATDE). This engir has exceeded all the Army's perf mance goals for advanced helico



HAT ALREADY HAS THE RIGHT STUFF.

es. This technology will be fully mented in the new ATE109. w production techniques can plemented quickly, too. Garrett uction facilities utilize some of test manufacturing and testing iques known. And Allison, with ctory of the future" program, ne capability to meet any uction needs. Several times g this century Allison has turned npressive numbers of engines, America needed engines.

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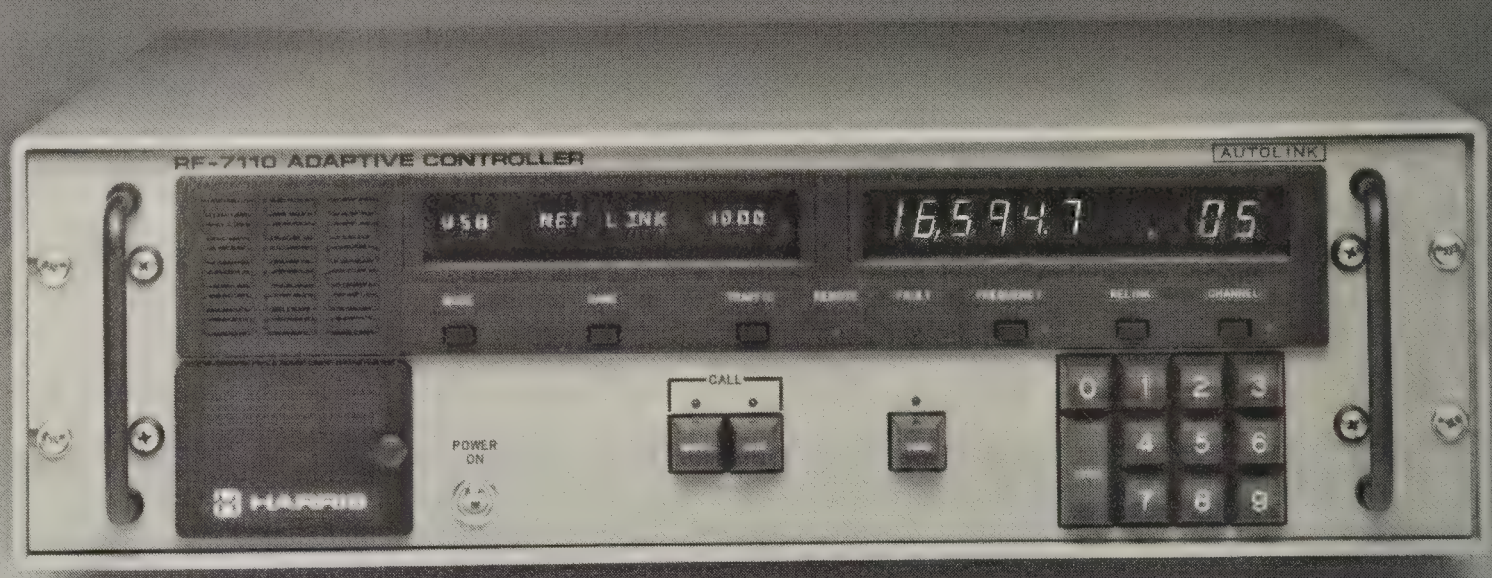
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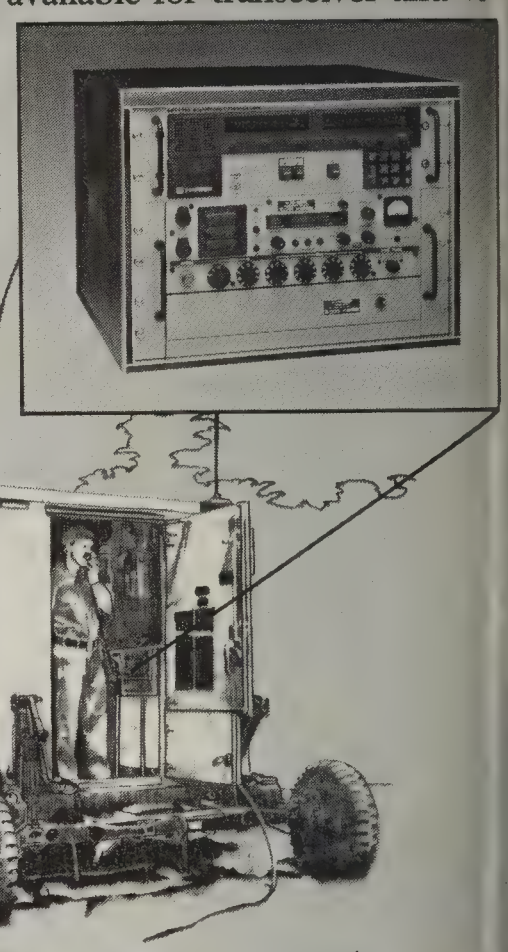
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AUSA in Action

Susquehanna Chapter Sponsors AUSA Senior Associate's Visit

Over two hundred AUSA members and guests heard Association Senior Associate Lt. Gen. Richard G. Trefry, USA, Ret., former inspector general of the Army, speak on "Landpower: Today's Army Force" at the Aberdeen Proving Ground, Md., officers' club.

The AUSA's Susquehanna Chapter sponsored Gen. Trefry's visit to address the winter dinner general membership meeting. "When we look at history we find that the ultimate deterrent to war is the soldier on the ground," Gen. Trefry said. "We should have an appreciation of what Landpower is and what it means. We know what sea power is and we know what air power is, but we at AUSA have the mission of educating people about Landpower, the soldier on the ground."

Citing Europe as an example, the general said that the U.S. troop presence there has been a deterrent since World War II. "It's in places we've not had troops that we've had problems," he said. "I'm not saying we need troops everywhere because that's not the answer to all diplomatic problems, but Europe is one good example of the deterrence of Landpower."

Then Gen. Trefry went on to say conflict, reaching back to the beginning of time, "is the natural state of man."

"Those of us who are soldiers by profession have seen it over time," he said, "and we are the ones with the most to lose. Peace is probably the most unreachable thing there is despite our ardent quest. We must learn to live with that," he said. "Only by understanding that, and knowing the costs, the alternatives, can we stay out of conflicts or, if we get into them, win, and when we win them, keep the peace."

Following the speech, Susquehanna Chapter President Mike Davall presented Gen. Trefry with a check for $500 to support the AUSA Landpower Education Fund.

Mr. Davall also recognized five soldiers honored for outstanding achievements: Sp.4 Laura Ritchard, soldier of the year, Ordnance Center and School (OC&S); S.Sgt. Alfredo Febo-Cruz, noncommissioned officer of the year, OC&S; S.Sgt. John Young, platoon sergeant of the year, OC&S; PFC Frank T. Mountford, soldier of the month, Headquarters and Headquarters Co., Troop Command; and PFC Gregory A. Owen, soldier of the month, 523rd Military Police Co.

The chapter president welcomed 13 new corporate members to the chapter. They are: Aberdeen TV and Stereo; Consultant and Designers Inc.; Cook Motor Cars Inc.; CPT Corp.; Edward F. Duggan; FMC Corp.; Holiday Inn of Aberdeen; LTV Inc.; Maryland Portable Concrete; MATCOM Federal Credit Union; Town and Country Sports Cars; Viele and Co. Hardware Inc.; and West Nottingham Academy.

Two past chapter presidents were presented service pins. Bob Tarring, president from 1982–84, received his pin and was presented two national award streamers for the chapter flag, earned during his tenure. Chuck Boyle accepted the past president's pin for his father, Clarence Boyle, who was unable to attend.



Susquehanna Chapter. *AUSA's senior associate, Lt. Gen. Richard G. Trefry, USA, Ret.* (second from right), *accepts a $500 check from Mike Davall, chapter president, while Maj. Gen. William E. Potts* (left), *commandant of the Ordnance Center and School, and Maj. Gen. Andrew H. Anderson* (right), *commanding general of the Test and Evaluation Command, Aberdeen Proving Ground, Md., look on. Gen. Trefry accepted the check in behalf of AUSA's Landpower Education Fund.*



buquerque Chapter. *Gen. Michael Davison, USA, Ret., discussed the S. Military Academy and the lawsuit Gen. William C. Westmoreland, USA, t., against CBS at a corporate member breakfast. Seated to his left is Hill wis, chapter president.*

First Meeting of New Year

Association Trustees Approve '85 Budget

The Association of the U.S. Army's first 1985 Council of Trustees' meeting was held at AUSA's national headquarters building in Arlington, Va. John W. Dixon, council chairman, presided over the meeting.

The first item on the agenda was a vote on the 1985 budget as recommended by the Finance Committee, whose members include: Ben Head, chairman; David G. Halloran; Gen. Walter T. Kerwin, USA, Ret.; SMA William G. Bainbridge, USA, Ret; and Maj. Gen. Robert F. Cocklin, AUS, Ret.

Arthur S. Welch, AUSA's treasurer, an *ex officio* committee member, served as staff coordinator.

The council unanimously approved the budget as recommended after a review of major programs and projects that will have an impact on this year's budget such as advertising in ARMY magazine, the Annual Meeting, individual, corporate and sustaining memberships, insurance programs, symposia, position papers and fact sheets, *AUSA News*, various administrative expenses and the Landpower Education Fund. (Pie charts depicting the projected income and expenses for the Association in 1985 can be found on Page 18 of this issue.)

Gen. Cocklin, AUSA's executive vice-president, then briefed the council on ongoing activities and planned 1985 goals, to include: new membership goals in all categories of membership; the 1985 Annual Meeting; new targets for the Landpower Education Fund; future industry symposia; the Washington Landpower Forum; and future support of the new Army Community and Family Support Center.

TRADOC General Speaks at Dinner

Gen. William R. Richardson, commander, Army Training and Doctrine Command, spoke at the Ft. Leonard Wood–Mid-Missouri Chapter's annual president's update at Ft. Leonard Wood's new Davis Enlisted Club. Gen. Richardson discussed the Army's current readiness, significant improvements in the quality of soldiers and leaders, equipment, training and doctrine.



Ft. Leonard Wood–Mid-Missouri Chapter. *Gen. William R. Richardson, commanding general of the Army's Training and Doctrine Command, speaks on the quality of today's soldiers while addressing a chapter membership meeting.*

Over three hundred members and guests attended the dinner meeting to hear Gen. Richardson and Chapter President Bill Ransdall report on AUSA's Annual Meeting and other chapter activities in 1984. Four military organizations were recognized for their increased membership throughout the year. Awards were presented to the 543rd Explosive Ordnance Disposal, the post Dental Activity, the 1st Training Brigade and the 2nd Training Brigade. In addition, the chapter was recognized by 5th Region for its increase in corporate membership.

Three of Ft. Leonard Wood's distinguished soldiers were also introduced and recognized for their accomplishments. They were SFC Jeffrey Singer, drill sergeant of the year; S.Sgt. Keith Benoit, NCO of the year; and Sgt. Larry Jones, instructor of the year.

★ STAR CHAPTERS ★

Chapters that reach their aggregate membership targets are classified as Star Chapters and will retain that status until they fail to reach any subsequent membership goal. The following chapters have achieved Star Chapter status. Chapters annotated with an asterisk have attained their semiannual goal based on the 30 June, 1985, membership targets and the end-January 1985 membership statistics. Those chapters without asterisks achieved their Star Status based on the 31 December, 1984, membership goals.

* Alaska (Anchorage)
Ark–O–Tex (Texarkana, Tex.)
Bavarian Alpine (Munich, Ger.)
Bluegrass (Lexington, Ky.)
Blue Mountain (Harrisburg, Pa.)
* Braxton Bragg (Ft. Bragg, N.C.)
Captain Shreve (Shreveport, La.)
Central Texas–Ft. Hood (Killeen)
Cincinnati (Ohio)
Connecticut (Norwalk)
Denver Centennial (Colo.)
Des Moines Freedom (Iowa)
Dix (Ft. Dix, N.J.)
Douglas MacArthur (Norfolk, Va.)
Fairfax–Lee (Ft. Belvoir, Va.)
Florida Gulf Stream (Miami)
Ft. Jackson–Palmetto State (Columbia, S.C.)
* Ft. Monmouth (N.J.)
Fort Pitt (Pittsburgh, Pa.)
Fort Worth (Tex.)
Gallant Pelham (Ft. McClellan, Ala.)
GA Omar N. Bradley (Ft. Bliss, Tex.)
* Gen. Creighton W. Abrams (Frankfurt, Ger.)
Gen. Joseph W. Stilwell (Ft. Ord, Calif.)
Gen. W. C. Westmoreland (Reno, Nev.)
George Washington (Washington, D.C.)
* Greater Augusta–Ft. Gordon (Ga.)
Greater Los Angeles (Calif.)
Hawaii (Honolulu)
Henry Leavenworth (Ft. Leavenworth, Kan.)
Indiana (Ft. Benjamin Harrison)
Korea (Seoul)
Leonidas Polk (Ft. Polk, La.)
Long Island (N.Y.)
Magnolia (Jackson, Miss.)
Maine (Saco)
MG William F. Dean (Oakland, Calif.)
MG Henry G. Sharpe (Lathrop, Calif.)
Massachusetts Bay (Boston)
Mid-America (Wichita, Kan.)
* Mid-Palatinate (Kaiserslautern, Ger.)
Mother Lode (Sacramento, Calif.)
New Orleans (La.)
New River Valley (Radford, Va.)
Norddeutschland (Bremerhaven, Ger.)
Pikes Peak (Ft. Carson, Colo.)
* Polar Bear (Fairbanks, Alaska)
Robert E. Lee (Ft. Lee, Va.)
San Bernardino–High Desert (Barstow, Calif.)
San Jacinto (Houston, Tex.)
Southeastern Oklahoma (McAlester)
* Southern Arizona (Ft. Huachuca)
Southern New Mexico (Las Cruces)
Spearhead (Frankfurt, Ger.)
Sunshine (Orlando, Fla.)
Tacoma–Ft. Lewis–Olympia (Wash.)
Texas Capital Area (Austin)
West Point Area (West Point, N.Y.)
Wright Brothers (Dayton, Ohio)
* Yorktown (Zweibrücken, Ger.)



Korea Chapter–19th Support Command District Subchapter. *Members of the command gather at a subchapter membership breakfast held at Camp Henry to hear the Eighth U.S. Army Command Sergeant Major, Larry Hampton, speak.*

Around the Chapters



Gen. William C. Westmoreland Chapter. *Col. Nelson B. Neff, ounding president of the chapter, receives the Past Presi- dent's Emblem during a recent awards banquet. Presenting he pin is Lt. Col. Minor Kelso, USA, Ret., chapter president. Col. Neff served as chapter president during 1968, the Reno, Nev., chapter's founding year.*



Robert E. Lee Chapter. *Maj. Gen. Allen K. Ono, deputy chief of staff for personnel, administration and logistics, Army Training and Doctrine Command, presents the AUSA service school plaque to Capt. Jean E. Fleuvog, distinguished graduate, quartermaster advanced common core course.*



Detroit Chapter. *Don Adams, chapter president* (left); *Lt. Gen. Willard W. Scott Jr., superintendent, U.S. Military Academy; Mrs. Scott; and Michigan's USMA Alumni chapter president, Carver Wood Jr., celebrate Army's Cherry Bowl (10–6) victory over Michigan State during a reception and dinner banquet held after the football game and hosted by the chapter.*

oldiers Honored for Saving Lives

ree Ft. Carson, Colo., soldiers involved e-saving efforts in recent accidents re- d awards at an AUSA Pikes Peak Chap- nonthly luncheon.

.5 Robert Love, an ambulance driver emergency medical technician at the s Army Community Hospital, received A's Meritorious Achievement Medallion. credited with saving the life of a four- old girl who fell into a swimming pool apartment complex.

e child had been under water for ap- mately three minutes when an apart- maintenance man rescued her. Sp.5 administered mouth-to-mouth resusci- and cardiopulmonary resuscitation.

Sgt. Michael Emery and PFC Michael Almeida, both assigned to 1st Battalion, 29th Field Artillery, were also award recipients. They were recognized by the Association for helping to free a trapped man from his car after an automobile accident. Paramedics who arrived on the scene after the soldiers said that the two had saved them valuable time in attempting to rescue the injured man.

Sgt. Emery assisted paramedics and firefighters in getting the victim out of the car, while PFC Almeida aided by redirecting traffic.

The 50 other soldiers at the luncheon were selected for attendance by their sergeants major.

Chapter Notes

San Francisco Chapter. Secretary of the Army John O. Marsh Jr. was the featured speaker at a chapter luncheon held at the Presidio Officers' Club. Secretary Marsh discussed the Army family.

At a joint chapter advisory board and executive committee meeting, Lt. Gen. Robert Arter, commander, Sixth U.S. Army, discussed how AUSA supports the total Army.

Blue Mountain Chapter. Col. William Henry, commander of the New Cumberland Army Depot, spoke about the depot's mission and the proposed construction of a regional distribution center. His remarks followed a tour of the depot's facilities.

ASSOCIATION OF THE U.S. ARMY

AIMS AND OBJECTIVES

THE ASSOCIATION OF THE U.S. ARMY shall be an organization wherein all who are in accord with its objectives may join in the exchanging of ideas and information on military matters, and in fostering, supporting and advocating the legitimate and proper role of the Army of the United States and all of its branches and components in providing for and assuring the nation's military security.

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**Council Member
***Staff Coordinator

Heidelberg Chapter–Karlsruhe Subchater. The commander of the 18th Engine Brigade and Karlsruhe community, Col. C O. Magnell, spoke at a soldier and fam appreciation day. The day's activities inclu ed a mass troop formation, a recogniti and award ceremony, games for the c dren, door prizes, displays by community ganizations and refreshments.

Hawaii Chapter. Ambassador Edward Rowny discussed the strategic arms red tion talks while addressing more than 2 members and guests attending a chap luncheon at the Hale Koa Hotel.

New York–Col. Joseph Markle Chapt The chapter donated $250 to help supp the Ft. Hamilton retiree council's annual tiree activity day.

Minutemen Chapter. Maj. Gen. Robert Molinelli, commanding general, Ft. Deve and deputy commanding general, First U Army, addressed the chapter's annual Pe Harbor Day dinner. His theme was, "An Readiness and Activation of the 10th D sion."

Greater Yuma Chapter. The commande the Army's Test and Evaluation Comma Maj. Gen. Andrew H. Anderson, talked ab the Army's and Yuma Proving Ground's ture at a chapter membership meeting.

St. Louis Gateway Chapter. Hon. Will D. Clark, principal deputy assistant se tary of defense for manpower and rese affairs was keynote speaker at a chap general membership luncheon.

Capital District of New York Chapter. A dinner meeting cohosted with local chap of the Reserve Officers Association and Retired Officers Association, Dr. Thon Kelly presented a survey of U.S. Preside which included information on their ba grounds, leadership ability, foreign po accomplishments and domestic accompli ments.

AUSA–ROTC Company Note

Terry D. Allen Jr. Company (New Mex Military Institute). Cadet members vie the film, "Hughes Review." Honored at meeting were cadets Steven Scioneaux Patrick Lepre. Cadet Scioneaux is the c pany's top recruit and Cadet Lepre has highest attendance at company functio

Capt. George Markos Company (Te Christian University). The company ducted a 10k run, and trophies and pr were awarded to participants. The win included Rodney Furr, Mike Tarvin, M Hernanday, William Ray, Rob Woerner, brey Stacy and Chip Coulter.

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That's the toll-free number to ca AUSA national headquarters. The AU SA Action Line is open 8:30–5:00, Mo day through Friday, except holidays. you have a question about AUSA, giv us a call.



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The second FLIR sight for night operations is part of Apache's Target Acquisition and Designation Sight (TADS), which enables the crew to search for, detect, recognize and engage targets. TADS also provides high-power direct-view optics, a high-resolution video system, a laser designator and tracker, and a range finder. Data from TADS is used by the Apache fire control computer for all of the helicopter's weapons systems.

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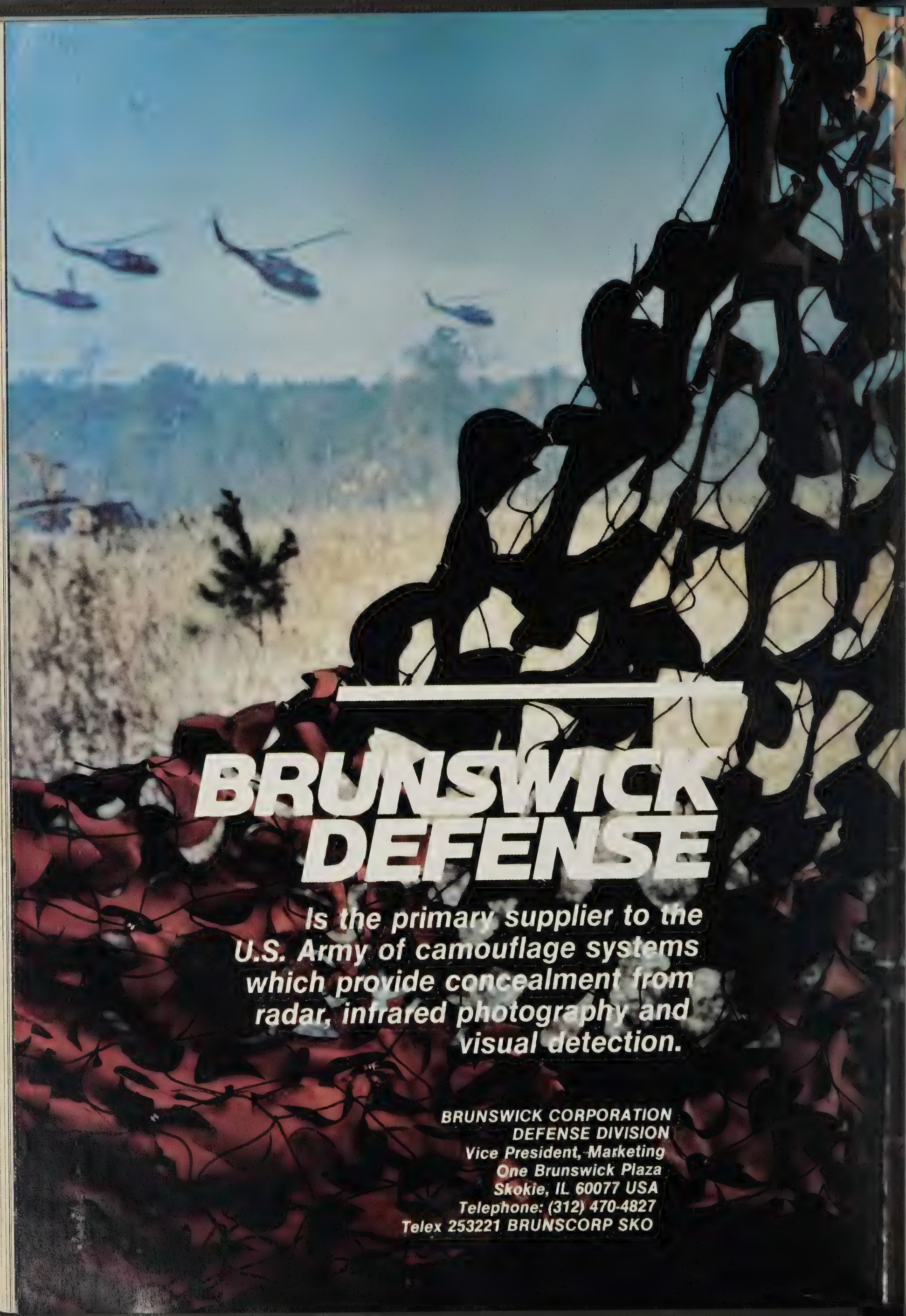
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ARMY
The Magazine of Landpower

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To the halls of Montezuma came reports of mysterious men from the sea—men with swords more lethal than the clubs and spears of the Aztec warriors. These strangers rode deer without horns and carried sticks which spat fire and stone.

They arrived at the Aztecs' dazzling capital in 1519. Believing the procession to be the coming of the god Quetzalcoatl, Montezuma did not analyze the aims, abilities or mission of the aliens. Against the advice of his council and nephew Cacama, who urged resistance by force or deception, Montezuma failed to call upon his army which outnumbered the strangers 1000 to one.

His troops could have easily annihilated the invaders or cut off their escape, isolating and starving them into surrender. Instead, the noble but naive leader welcomed the conquerors.

Thus, the Aztec empire—rich, cultured, advanced in agriculture, arts and the sciences, with a population of five million, was brought to its knees by 600 men, 17 horses and 10 artillery pieces.



Other great civilizations have disappeared over the years because their military leaders failed to recognize—or ignored—the strengths, capabilities and intentions of their adversaries.

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Another Look at Light Divisions, Simulation and Training

■ Edwin W. Besch's "Are Our Light ivisions Too Light?" (February) was an ticle that needed to be written. Due to e refusal of Congress to provide adeuate air- and sealift, the Army must "go ght" or it will be unable to go at all. nfortunately, the light division concept, it is now structured, is fatally flawed. nless their opponent is in a mountainis or urban area, or is primitive, the ght divisions will be in serious trouble. All over the world, particularly in counies influenced by the Soviet pattern,

Letters

odern armored forces dominate current ategy. History has shown that any const between integrated combined arms ams and infantry alone is no contest. nust agree that an armor element is esntial for the light division to remain able in most circumstances.

I was a little disappointed that the U.S. my's own mobile protected gun sysn (MPGS) program was not discussed more depth. The two leading candites for the MPGS at this point are the idillac Gage Co.'s Stingray and the IC XM4 armored gun system. Either these two systems brings 105-mm firewer and C-130 compatibility together. this program could be accelerated, it uld provide a tank-like combat element thout sacrificing strategic mobility. A eeled alternative is the MOWAG Shark. The recent development of reactive ar-r has not gotten a lot of publicity in s country. I think this Israeli idea has umber of applications here. With little ditional weight, this could provide an ler of magnitude of additional protecn against shaped-charge weaponry, escially the RPG 7 and bazooka types. Two other international ideas are worth nsidering. A "stretched" version of the pp MaK Wiesel armed with an arred TOW missile launcher, 25-mm in-gun, Stinger, or other weapon would ke a worthwhile addition to the light ision (especially when combined with ctive armor). Also, some use should found for the remarkable Israeli 60-mm ervelocity gun.

n any event, the light divisions must be allowed to go without armored ting vehicles. Alternatives are already ilable, without a costly and lengthy elopment period, that would make word "light" not synonymous with word "weak."

MICHAEL J. SERGEANT
kakee, Ill.



Essential Element

■ I read with great interest the fine article written by Col. Andrew P. O'Meara Jr. and Lt. Col. Raymond C. Hartjen Jr. on "Systems Approach to Combat Training" (January). I believe, however, that Cols. O'Meara and Hartjen overlooked an important element which is not only affecting soldier and unit combat readiness, but is also expanding training scenarios while reducing associated operating and support costs.

I am referring to the Army's increasing use of simulation. I believe the contribution to combat readiness being realized through simulation will exceed the sum of the elements listed in the article.

The Army has progressed since the early 1970s from enhanced individual skills through simulation such as the multiple integrated laser engagement system (MILES) to the capability for training attack crews in a combat environment with the introduction in fiscal 1986 of the combat mission simulator for the AH-64A Apache.

A bold effort is under way to provide, through simulation, the ability to "train as we fight" in the Army aviation arena. Conceptually, the aviation team of attack, scout, command and control will be trained in a real-time combat environment through the development and fielding of aviation combat team trainers.

Additionally, efforts are under way by Headquarters, Army Materiel Command, through manpower and personnel integration (MANPRINT) to ensure adequate consideration for the "man in the loop," his limitations, capabilities and training in getting the same level of attention previously reserved for technology advancement in performance.

These are indeed exciting times in the U.S. Army, thanks to dedicated soldiers like Col. O'Meara and Col. Hartjen.

COL. BOBBY R. ADAMS
Warren, Mich.

Reserve Training

■ The equipment compatibility problems outlined by Majs. Donald B. Skipper and John T. Fishel, U.S. Army Reserve, in "Equipment Compatibility Problems Denigrate Readiness of Reserves" (February) are nice problems. There has been an increased effort of late to provide the reserves with modern equipment and, of course, training is required.

However, the solution offered by the writers is typical of active-duty officers who do not understand the Reserve program. Their recommendations require more training time, which is just not available to the average reservist. Few can get the additional time off from their civilian jobs.

New equipment training is not new to the reserves. We have been training on "new" equipment for years. Granted, some of it was often a generation or two behind the equipment active-duty soldiers were using, but it was new to us and required training. That is what the reserves do best. That is about all we have to do for most of the 38 days a year authorized for training.

Rather than more training time, what is needed are more training opportunities for our trainers—the full-time military technicians and civilian maintenance technicians supporting the units. These are the trainers who can further teach the operators and mechanics. They must be authorized the funding and quotas at service schools, depots and civilian agencies. There is plenty of time during the reservist's year to learn to operate the new equipment if his instructor is trained.

COL. ARTHUR E. DUNN JR.
U.S. Army Reserve, retired
Pittsburgh, Pa.

Applauding Letters

■ Your series, "The Regiments" (December 1983–July 1984) was outstanding, as is your entire magazine. I would like to see similar articles on divisions, separate brigades and so on.

I am not a "big wheel" in the Army so my opinion may not matter much but I would like to say that ARMY is the finest in its category. It has something for everybody. I do not read every article, but I read most of them. I like the articles, but

I like, even more, the responses to them.

The Letters to the Editor section is great. I am a citizen first and a soldier second. My country is more important than the Army. Your magazine, through articles and letters, presents the Department of Defense/military establishment side of military issues from both conservative and liberal viewpoints in a clear, concise manner.

To be honest, I am not a member of AUSA because it supports the military, its objectives or the soldier, although these are good reasons. I am a member because ARMY magazine is well worth the meager membership fee.

SFC WILLIAM C. COREY
Ft. Polk, La.

Recognizing Dubious Analysis

■ It is good to see acknowledged in imperishable print that many of the conceptual and analytical underpinnings of popular models and theories are about as substantial as a house of cards. Col. T. N. Dupuy, U.S. Army, retired, in "Criticisms of Combat Models Cite Unreliability of Results" ("Front & Center," March), shows clearly that hundreds of analysts, who have worked for years at U.S. taxpayers' expense, have labored mightily and brought forth a litter of mice.

Their reluctance to account for human factors is easy to understand, however. It is part of our mania for the quantifiable, the idea that all aspects of war can be precisely measured on a numerical scale. They cannot.

War is fought by men, not by machines. Men get tired; they make mistakes because of fatigue and pressure. Men fear death or maiming on the battlefield. They miss and worry about their families. They wonder how strongly their fellow citizens support their army. None of this can be measured precisely.

It is good to see a discussion of "incest, . . . perversion and indecent exposure," and an emperor's nakedness, suitable for family reading.

LT. COL. ROBERT P. FAIRCHILD
New York Army National Guard
Ft. Monroe, Va.

ARMY invites letters to the editor. The subject matter may be about material that has appeared in the magazine or about any topic which the writer feels would be of interest to **ARMY** readers. The editors reserve the right to edit letters for reasons of style, accuracy or because of space limitation. All the letters must be signed, and while we prefer to carry the writers' names we will consider requests for withholding them if there is a compelling reason to do so.

The Editors

Solutions to Abuse?

■ Col. Richard B. Stuart cites several ways that Army representatives can provide support for an alcohol-free environment or a reduction in the consumption of alcoholic beverages within the military community ("The Problem of Alcohol Abuse," "Front & Center," February). His suggestions are valuable and deserve implementation.

We can also reduce the availability of alcohol (without giving it the aura of "forbidden fruit," as was done by the 18th Amendment) and change the message we send by raising the price of alcoholic beverages sold in military facilities to the higher level found in the civilian sector. Such a change should apply to both individual drink prices in clubs, and the prices charged in exchanges, Class VI and bulk sales facilities.

The same message regarding the interest we show in the health of our service members would also be reflected by increasing the price of cigarettes sold in military facilities.

At the present time, knowingly or not, the price structure in the clubs and exchanges for alcoholic beverages and cigarettes subsidizes and encourages their consumption, which can result in alcoholism, child and spouse abuse, lung cancer, emphysema, liver disorders and the like.

Isn't it time we did something about this?

MICHAEL B. MINTZER
Ft. Belvoir, Va.

Parameters Note

■ We appreciate Capt. Daniel Imholte's kind inclusion of *Parameters*, the quarterly journal of the U.S. Army War College, in his "Starting a Desk-side Library: The Essential Reference Books" ("Cerebrations," February). He did make one error, however, that I wish to correct before we get a sackful of inquiries to answer: *Parameters* subscriptions are not "free to most military professionals."

In recent years, owing to increasing demand for our journal and the Army's continuing concern over the cost of official periodicals, we have tightened considerably the reins on our free distribution. We now provide free subscriptions to Army War College graduates as long as they are on active duty, to a limited number of other senior field-grade officers and to most active Army general officers. We also provide some free subscriptions to interested members of Congress and other civilian "VIPs" in the defense arena, and to various research institutes, embassies, defense *attaché* offices, libraries, and military schools and organizations.

Others who wish to receive *Parameters* must subscribe through the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The current annual cost is $9.50 for domestic and APO addresses, and $11.90 for foreign addresses. Checks should be made payable to the superintendent of documents.

COL. WILLIAM R. CALHOUN JR.
Editor, *Parameters*
Carlisle Barracks, Pa.

Information Please

■ I am writing a unit history of the 509th Radio Research Group in Vietnam. I served as a Sp.5 with the 509th from July 1969 to July 1970.

I would like to hear from anyone who served with the 509th at any time.

WILLIAM C. BARTO
Grumman Aerospace Corp.
Bethpage, N.Y. 11714

Aviation Tools

■ Where has Maj. Lawrence E. Casper been the last few years? Army aviation's evolution into a combat arm seems to have passed him by. His branch detailing idea in "Branch Needs to Develop Leadership" ("Cerebrations," February) is as obsolete for the Army as a well-bred horse.

Back when officers rode horses, branch detailing worked; not anymore. The Army has grown tactically and technically complex. Officers today, especially aviators, must be competent. Competence comes from hands-on experience with the tools of the trade.

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ng for him in attack and assault aviation nits. These units give leadership, weapns and combined arms experience enough mature any lieutenant.

I agree that the infantry is as fine a hool of leadership as can be had in the rmy. I would not trade my memories infantry service for all the flight pay an aviation battalion, but neither would trade an attack helicopter for a well-ed horse. Branch detailing would de-il Army aviation's progress as a com-at arm.

CAPT. RONALD M. BUFFKIN
uburn, Ala.

ivilian Supremacy

■ I would like to respond to some of ewis Sorley's remarks in his December 84 review of Gen. Bruce Palmer Jr.'s ook, *The 25-Year War: America's Mili-ry Role in Vietnam*. Mr. Sorley says he nds the military professionalism of the int Chiefs of Staff (JCS) "most trou-ing" because they did not resign or re-e and publicly disagree with military olicies during the Vietnam war which ey felt were wrong and which they uld not get the Administration to alter.

I don't agree. I think that Mr. Sorley has little appreciation of the implications of our nation's tradition of civilian supremacy. The military is supposed to carry out civilian policies. The military is supposed to implement policy—not make it. If officers resigned or threatened to resign every time they disagreed with the civilian policies they have sworn to carry out, we would not have civilian supremacy over the military.

When people accept commissions in the armed forces they agree to faithfully implement civilian policies whether they agree with them or not. It is not proper for the officer corps or the JCS to pass judgment on the wisdom of civilian policies and try to force changes in those policies with threats of resignation or other sorts of pressure.

Members of the JCS may be the President's principal military advisors, but the President is under no obligation to follow their advice. If the President had to follow the advice of the Joint Chiefs, they, in practice, would command him and civilian supremacy over the military would no longer exist.

Mr. Sorley mentions that in the fall of 1967 the JCS supposedly considered resigning *en masse* to protest President Lyndon B. Johnson's refusal to call up the active reserves for service in Vietnam, as the JCS had recommended. If the JCS had resigned, public opinion would probably have been on President Johnson's side. Calling up the active reserves would have been rather unpopular, as would have been other policies recommended by the JCS, such as unrestricted bombing of and ground action against North Vietnam.

Another matter to consider is the negative effect the resignation of the JCS would have had on the morale of our forces in Vietnam. Yet another factor to consider is the negative effect their resignation would have had on the spirit of military discipline.

What if platoon leaders resigned every time they disagreed with their company commander and company commanders resigned every time they disagreed with their battalion commanders, and so on up the chain of command? How could an Army function?

JOSEPH FORBES
Pittsburgh, Pa.



Passing the Test

■ The article by Maj. Michael L. McGee, "The Test," in the December 1984 issue, demonstrates that it takes guts to trust. "Entrusting your career" to a group of NCOs takes moral courage. Units of this type invariably succeed in battle and that is the payoff.

COL. HAROLD H. LEE
U.S. Army, retired
San Francisco, Calif.

■ "The Test" by Major Michael L. McGee (December 1984) was an absolute joy to read. I am sending a copy of it to the first sergeant with whom I had the pleasure of serving during a two-year battery command in U.S. Army, Europe. I'm sure that it will be a much appreciated gift.

Maj. McGee's vivid portrayal of his unit's test underlines the critical bond among the soldier-leaders of our Army: trust. Without it, the state of unit cohesion which has been so highly stressed by the Army's leadership will be forever elusive.

The article described another element which directly coincides with the test: risk. It would have been all too easy for other commanders to have complied with the executive officer's "recommendation" to "make use of this excellent resource to get ready for the inspection," or to have responded to the commanding officer's statement of "well, it's your career." Maj. McGee's risk for his troops undoubtedly reinforced, and was reinforced by, his trust of his men.



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One of Hawk's missions is to provide air defense support for the Rapid Deployment Forces.

Raytheon

Maj. McGee's company passed the IG inspection long before the team arrived to inspect the combat readiness of his unit.

It passed on the day that Capt. McGee and 1st Sgt. Vicente Garcia looked each other squarely in the eye and agreed, as professionals, to trust.

CAPT. RALPH R. STEINKE
Portland, Ore.

■ I enjoyed Maj. Michael L. McGee's article, "The Test" (December 1984) very much. Although Maj. McGee's was the first article I have read on this subject, I'm sure every young commander past and present has walked and will walk the same path.

What the major didn't state, but I'm sure realizes, is that he was going through his command training period; he was merely passing through. His first sergeant and NCOs took him in hand, and carried out the orders and directives of higher headquarters as he passed them along. They were doing their job. He was there only a short period of time, and another green commander later took his place for this training period. The same story is repeated often.

Once a young commander realizes he does not know everything and that his NCOs have been performing their jobs for years, he gets their complete support and that little extra effort out of them. They will teach, guide, work with and protect their commander. I'm sure every commander can relate similar stories about their NCOs pulling them through.

There have been and are commanders who cannot communicate with their NCOs, who have the attitude, "I am the commander," "I'm always right," "I know everything." This type of commander will never be able to write an article such as Maj. McGee's because he won't bother to earn the respect of his NCOs.

Consequently, he will never be able to get that extra effort from them. They will do their jobs, but not to their full ability. A true leader can recognize this, and reap his harvest.

SGT. MAJ. HARVEY L. JONES
U.S. Army, retired
Seminole, Fla.

Controlling BAI

■ Gen. William E. DePuy, U.S. Army, retired, raised a number of significant areas of inquiry in his article, "Toward a Balanced Doctrine" (November 1984).

This thought-provoking inquiry likewise should set off alarm bells throughout the ranks of our warrior officers.

Reference is made to battlefield air interdiction (BAI), the engagement of targets of high significance to ground commanders. Gen. DePuy notes that the Air



Force has not yet decided what to do about battlefield air interdiction! Since BAI requires penetration and exposure to enemy air-defense points, to attack battlefield targets, the Air Force wants to be deliberate.

Apparently, the Air Force desires careful planning and the employment of a number of support aircraft. The planning cycle requires 24 hours, minimum. As Gen. DePuy points out, that is entirely incompatible with the Army's maneuver doctrine. This must qualify as the understatement of the year.

I realize modern aircraft are expensive and in short supply. A pilot is a highly trained and important cog in the total battle picture and is not easily replaced. If aircraft are subjected to enemy fire, some will be lost over the battlefield. What I do not understand is how this is any different from losing troops and armor on the line in the middle of a firefight engaging enemy armor? I am not consoled by the fact that the Air Force is agonizing over this still unresolved problem.

Gen. Sir Bernard L. Montgomery epitomized synchronization, U.S. Air Force style. Operation Market Garden was an utter failure, and Gen. George S. Patton Jr. was across the Rhine River while "Monti" was drinking tea and waiting for reinforcements.

I venture that the Army is somewhat nervous about the reliability of the Air Force in battlefield air interdiction. Why else do we have the Cobra and Apache? In Vietnam, helicopters and guns went in to support soldiers in hot zones on a daily basis. They went down where the fight gets personal, hot and dirty, but they were Army and maybe that makes a difference.

If the doctrine of maneuver is the cornerstone of the Army's battlefield management, and BAI is an integral part thereof, then is not the saying, "If you want something done right, you had better do it yourself" apropos?

My thought is, Army, take heed. Maneuver is your doctrine, and synchronization, including BAI, your life's blood. You had best control your own destiny. Any help you get from the wild blue yonder guys should be considered icing on the cake.

The Marine Corps does not rely on the Navy for BAI; maybe they have learned something we missed.

As long as the Army relies on, or even thinks about, Air Force help in BAI, th potential for disaster is built into th most potentially powerful concept sinc artillery. The time has come for the A my to take the steps necessary to prote its own.

Anything short of total control ov BAI, given the expressed reticence of th Air Force to avoid harm, would viola the trust the officer corps owes the so diers in its command.

The land battle doctrine is interdepe dent in all its functions and a hitch one as important as BAI could cause disaster of unmanageable proportions.

CLARENCE B. NEBLETT JR.
Richmond, Va.

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Understanding This Is Crucial to Success

Military Power and the U.S.-Soviet Dialogue

By Col. James B. Motley
U.S. Army, retired

n light of the U.S.–Soviet arms control talks in Geneva, perhaps it is time remind the world of five essential facts. st, the Soviet Union is an authoritarian ate not known for the free flow of ideas d information. Second, the Soviet poical system is based on the seizure, acmulation and consolidation of power.

Front & Center

Third, the Soviet system of governnt has no built-in mechanism for the aring or transferring of authority among beyond the small circle of men who nprise the top leadership of the Comnist Party of the Soviet Union (CPSU). arth, Soviet leaders have developed a litary force structure that would prel in a conventional war within the Eupean theater.

Fifth, the Soviets have used the arms trol process to limit U.S. modernion programs, while protecting their st significant modernization programs specially their intercontinental ballistic sile force.

Despite the Geneva news media extravnza (almost 500 accredited American rnalists were on hand), it appears that haps many have lost touch with the ic realities of the U.S.–Soviet relation-, nuclear arms and arms control. Afive years of inaction in arms control, meeting is not going to make a prond difference in the relationship. U.S. cials have cautioned that a successful step in Geneva does not mean that nuclear arms and space negotiations produce early or easy agreements.

a 13 January television interview, iet Foreign Minister Andrei A. Gro-o stated that the Geneva arms talks re not easy and sometimes [were] complicated." Commenting on difnces in the Soviet and U.S. positions, added: "It is impossible to examine ductively questions of strategic nuclermaments and intermediate-range nur weapons without considering ques-s of space, outer space."

Mr. Gromyko also stated, in another rview, that other arms issues were at e and would affect future arms con talks: "If the United States continues eploy its intermediate-range nuclear



system in Europe, the situation, one should put it straight, will become more complicated, much more complicated."

The men who have recently governed the Soviet Union were born and raised amid revolution, reached maturity during the despotic era of Joseph Stalin and a war that cost the lives of 20 million Soviets, and grew old building a nation that obtained superpower status in the 1970s. The late Konstantin U. Chernenko, former general secretary of the CPSU, was no different from his predecessors, Yuri V. Andropov and Leonid I. Brezhnev. All three were products of the same ruthless totalitarian political system and disciples of the Marxist-Leninist ideology.

Furthermore, they served in a collective leadership responsible for the policies that have contributed to Soviet-American confrontation over the past several years—the invasion of Afghanistan, the suppression of freedom in Poland, the downing of Korean Air Lines Flight 007 and the November 1983 walkout from the arms control negotiations.

While Mr. Chernenko's successor, Mikhail S. Gorbachev, is at 54 the youngest member of the ruling Politburo, initial indications are that there will be no major policy changes, at least for the time being.

The hard-line strategy that the Kremlin followed during Mr. Andropov's brief reign was the product of a collective leadership that not only included Mr. Chernenko, but also two other men with a reputation for toughness, Foreign Minister Gromyko and former Defense Minister Dmitri F. Ustinov. Mr. Gromyko's current commanding political position within the Soviet hierarchy explains to some extent the harsh and unyielding tone in Soviet foreign policy over the past year.

In the months ahead, there will be increasing domestic and international pressure on the United States to improve its adversarial relationship with the Soviet Union—a relationship, according to the Institute for Strategic Studies in London, that has "frozen into its worst state since the [1962] Cuban missile crisis"—through some type of arms control agreement.

We should remember, however, that the SALT (Strategic Arms Limitation Talks) I Treaty required three years of intense negotiations involving the senior officials of both governments. The SALT II Treaty took six years to complete. However, neither treaty limited arms.

During the 12 years that have passed since the United States ratified an arms control agreement, both countries' weaponry and politics, as well as the issues, have become more complex. With the start of a new round of talks, it is evident that the Soviet Union wants to magnify its advantage in offensive nuclear systems while stopping U.S. progress toward a strategic defense (that is, the Strategic Defense Initiative [SDI], commonly referred to as "Star Wars").

Unfortunately, despite the expectations of many, the prospects for major improvement in U.S.–Soviet relations in the near future are not bright. The fact of the matter is that for over 20 years, Kremlin leaders have pursued a policy of sustained

military growth in order to improve their country's international position while attempting to establish political dialogue with the United States and the West. The probability that these tactics will change under the leadership of Mr. Chernenko's successor is low.

The political landscape that Mr. Chernenko's fellow Kremlin hardliners view is a frightening one. They are preoccupied with internal problems; for example, a weak economy, agriculture, crime and alcoholism which have reached epidemic proportions, and a no-win situation in Afghanistan and Poland.

In Asia, the Soviets can apply pressure only at the expense of relations with China, and only scant targets of opportunity exist in Africa where the Soviets have been losing ground.

It is also hard to see what more the Soviets can do in Central America without risking major confrontation with the United States. In the Middle East, matters are so delicately poised that both superpowers are treading warily. Some in Moscow may even wonder if the Soviet Union is not overcommitted in the Third World.

Now that the United States has pressed ahead with programs to develop space weapons, the Soviets realize that a new round in the arms race is a reality. Collectively, the current Soviet leadership believes that the United States is out to achieve military superiority in order to unravel the Soviet revolution and its achievements. They view U.S. actions as a challenge to Soviet legitimacy and are determined to avoid any arms control negotiations that might limit their country's capacity to stay abreast of the United States.

For years, scholars have analyzed and examined the significance of future generational changes that will occur within the Soviet leadership. For the most part, the aging leaders have been cast as political hardliners and the younger generation as reformers with an incipient compatibility with the West. Perhaps such characterization is correct; perhaps not. One essential characteristic of the current Soviet regime, however, is its conservatism.

However, this trait does not preclude the expansion of the Soviet Union's sphere of influence. As historian Walter Laqueur noted, Soviet leaders are "prudent, cautious and even moderate men who will not, as a rule, take foolish risks; but their moderation can be taken for granted only if they are confronted with equal strength and equal determination."

It may be wrong to attach undue hopes of a softer international line to a new generation of Soviet leaders. Younger people, more often than not, are actually more enterprising than their elders, more willing to accept risks; in contrast to their predecessors, they have yet to prove themselves. The fact that Soviet domestic problems are so difficult to deal with may in itself contribute to a stronger emphasis on a more assertive foreign policy. In short, the younger generation of future Soviet leaders may not be any better than the old or necessarily progressive or liberal.

Regardless of what generation rules the Soviet Union, it would be highly unlikely for a Soviet leader not to try to prove his communist credentials by standing up to the United States. Nowhere will this be more evident than in the years ahead when the Soviet Union may well pass through the worst period it has experienced since the death of Stalin.

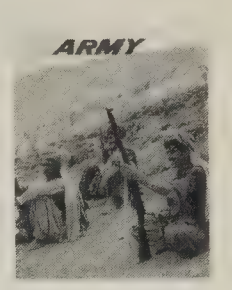
The director of the Soviet Academy of Sciences' Institute of Space Research, one of Moscow's spokesmen to the West on space matters, has said that, from an arms control perspective, it would be "absolutely incompatible" to expect cooperation from Moscow on civilian space ventures if the United States puts weapons in space.

In all areas of domestic, military and foreign policy, the Soviet Union stands at a crossroads. Soviet politics and policies change slowly, however. The new generation of Soviet leaders that follows Mr. Chernenko will not, in all probability, advocate the highly ideological campaign-like reforms associated with Nikita S. Khrushchev or the reformist tendencies advanced by Alexander Dubcek in Czechoslovakia.

Future Soviet leaders will be different from their predecessors in many ways. In all probability, as with Mr. Chernenko, they will have a more limited grasp of international relations and will be required to obtain a great deal of their knowledge on the job. They will readily accept the Soviet Union's superpower status and will have limited first-hand experience of the costs of building Soviet might. The presence of such leaders, according to author Seweryn Bialer, "will contribute to increased volatility in international politics and will make the uncertainty" that the United States faces even more pronounced.

Based on Soviet political rhetoric and actions taken to date, Mr. Chernenko's successors are not likely to take bold initiatives to assume meaningful arms control negotiations, end the war in Afghanistan, curtail flexing of Soviet military prowess, resolve Sino-Soviet differences

This Month's Cover



Rifles in hand, Afghan resistance fighters rest in place along one of the many trails through the border foothills into Pakistan, vital supply routes in the weakened but continuing struggle against Soviet occupation. An assessment of the current situation in Afghanistan by journalist and scholar Paul L. Moorcraft begins on Page 26. For this report, the author's academic knowledge of Third World political movements is supplemented by first-hand observations made during several trips into Afghanistan and its war zones. (*Photograph by Paul L. Moorcraft*)



"Well . . . actually I was thinking more in terms of *two* years active and 98 years in the Reserves!"

r improve relations with the United tates.

In the area of arms control, little, if ny, constructive dialogue has been put orth by the Kremlin. Soviet proposals to ate are nothing more than well-timed noves to slow progress in major U.S. eapons programs while building inter- ational and domestic political pressure gainst the SDI.

U.S. policy concerning the Soviet Union as been described as "an ever-changing ix between containment (confrontation, hallenge or hostility short of war) and ccommodation (coexistence, adaptation r cooperation)." Both secular trends and nique occurrences, personalities and ac- dents have affected the particular mix. he American public, as well as U.S. al- es, must be reminded that such factors ill continue to affect U.S.–Soviet rela- ons.

Perhaps the limited prospects for change Moscow are best summed up by for- er U.S. ambassador to the United Na- ons, Jeane J. Kirkpatrick, who said: "I ink the same Politburo is still in place. he same men, in other words, will be aking decisions for the foreseeable fu- re. Therefore, no dramatic change is kely."

There are no shortcuts or easy ways it of the historic conflict between the nited States and the Soviet Union. The im reality of prolonged conflict entails ncertainties, limited opportunities and ngers.

Enhanced Soviet military capabilities ceed reasonable needs for the defense the Soviet homeland, and Soviet inter- tional behavior of recent years has mpounded problems for the United ates in coexisting with the Soviet Union. us, understanding Soviet leaders' think- g on the utility, circumstances and pre- dents surrounding military power re- ires more than just an academic inter- .

Military power has always been the viet Union's principal means of assur- ; its survival and creating conditions in ich the Communist Party can pursue objectives.

Accordingly, Soviet leaders attach great portance to military power both in bal political–diplomatic and East–West itary realms because of the foreign icy options and political advantages it vides.

Understanding this central theme of viet policy is crucial for future assess- nts, expectations and actions pertain- to U.S.–Soviet relations, nuclear arms l arms control. □

OL. JAMES B. MOTLEY, U.S. Army, etired, Ph.D., is a member of the pro- essional staff of the National Institute or Public Policy, Fairfax, Va.

Henry Cabot Lodge

Ambassador Henry Cabot Lodge, former U.S. senator, combat soldier and statesman, active for many years at the highest level of national politics, died recently at his home in Beverly, Mass., at the age of 82. A long-time supporter of AUSA, he served briefly as the Association's vice-president in 1963, resigning when he was named ambassador to the Republic of South Vietnam in August of that year. Mr. Lodge received the George Catlett Marshall Medal, the Association's highest award, in 1967, and served several terms on the Association's Advisory Board of Directors during 1957–63 and 1965–74.

Mr. Lodge is best remembered by later generations for his role in the Vietnam war—two stints as ambassador to South Vietnam (1963–64 and 1965–67) and chief of the U.S. delegation to the Paris peace talks designed to end the conflict in 1969.

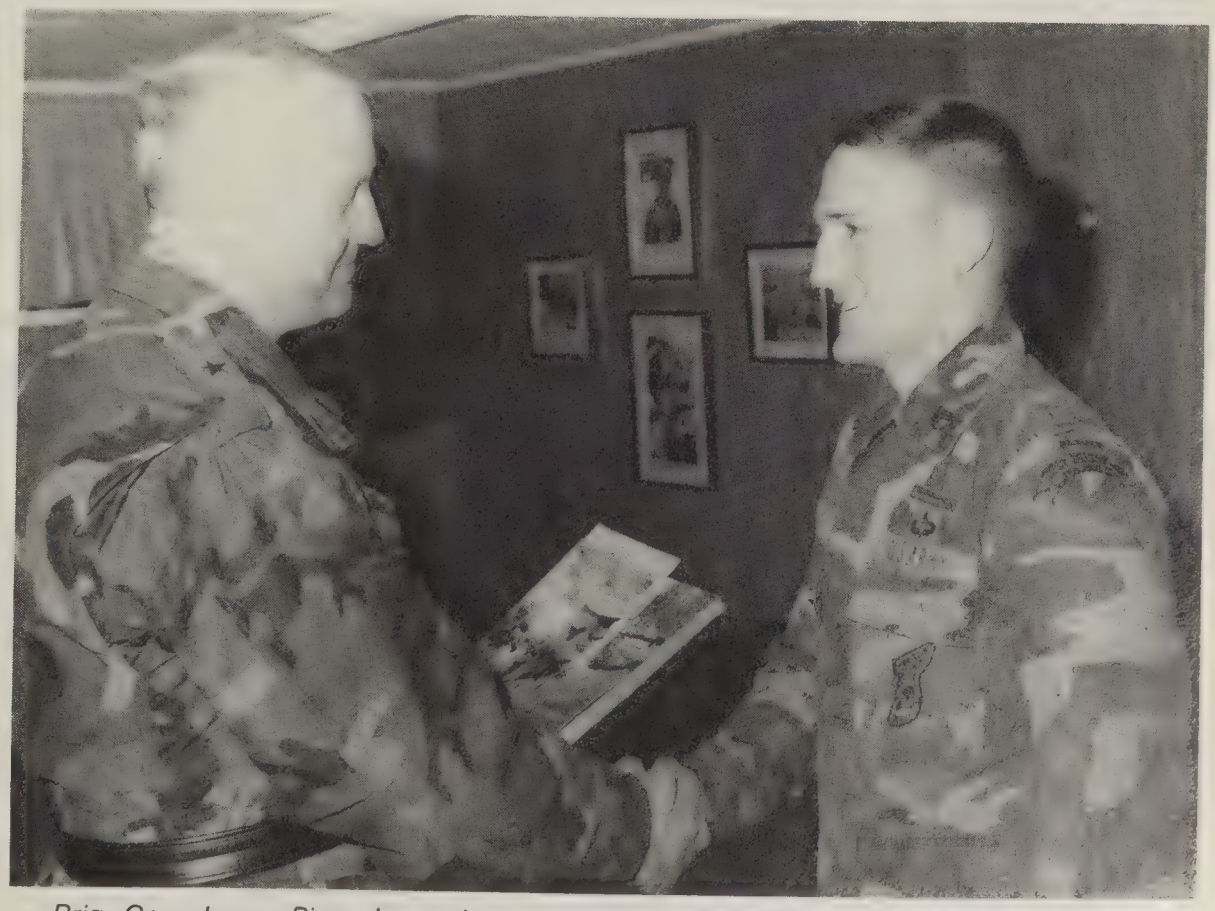
The grandson of a U.S. senator (Henry Cabot Lodge, for whom he was named), Mr. Lodge was first elected to the Senate in 1936. Reelected in 1942, he resigned to resume active Army service in 1944 but regained his seat easily after returning home in 1946.

He lost a close race for reelection to John F. Kennedy and was appointed U.S. representative to the United Nations in 1953, serving in that post until 1960 when he resigned to run for vice-president of the United States.

Mr. Lodge, who eventually retired from the Army Reserve as a major general, had a parallel military career that began in 1925 when he was commissioned in the Army's Organized Reserve Corps. A captain in the Armored Force by 1941, he took a leave of absence from the Senate to go on active duty and went to Libya in 1942 with the first of several small U.S. armored detachments that accompanied the supply of new American tanks to the British Eighth Army. He saw action in the battle of Gazala, and in the British retreat from Tobruk to El Alamein.

He left the active Army as a lieutenant colonel in 1945, having served overseas in Italy, southern France and Germany —five World War II campaigns in all. Mr. Lodge's military decorations included the Bronze Star, the Legion of Merit, the French Legion of Honor and *Croix de Guerre* with Palm.

The later phases of Mr. Lodge's diplomatic career included service as a special envoy during 1967–68 and as ambassador to Germany during 1968–69. He retired from public life in 1977, after seven years as a special representative to the Vatican.



Brig. Gen. James Piner Jr., assistant chief of staff, G4, Eighth U.S. Army, and AUSA Korea Chapter president, presents a copy of the 1984–85 ARMY Green Book *to S.Sgt. Richard C. Lamb, whose picture appears on the cover. Army Chief of Staff Gen. John A. Wickham Jr. autographed the* Green Book *especially for Sgt. Lamb during a visit to Korea. As a member of the Joint Security Area Reaction Force, Sgt. Lamb saw action during the defection incident at Panmunjom, South Korea, last year.*

Counting Enemy in Vietnam: A Difficult, Frustrating Task

By Maj. Gen. Edward B. Atkeson
U.S. Army, retired

If the *Westmoreland* v. *CBS* case was puzzling to many Americans, it was no less so to many of us who shared responsibility for keeping track of enemy forces during the Vietnam war. It is easy to forget that the war was a complex set of simultaneous struggles carried out on many levels.

At the high end of the scale, U.S. aircraft attacked targets in North Vietnam the way they might have bombarded military installations in Germany or Japan during World War II. In the south, we engaged enemy force regiments when and where they could be found—but, more frequently, when and where they found us, usually in the darkest hours of the night. The main force units maneuvered about the country, struck here and there, then ducked back into the jungle or across the Cambodian border.

Local force units, usually about battalion size, operated in the provinces in which they were raised and to which they looked for support. Some were highly competent fighting machines, but they tended to be more lightly equipped than the main force. Both the main and local force units were composed of full-time soldiers organized into conventional formations.

At the district and village levels, there were various types of part-time military, political and social organizations which provided the spies, guides, couriers, armed militia and political agitators on which the larger organizations depended. Many of the members of the local organizations were probably reluctant in their roles and would have preferred to sit out the war, but instead found themselves pressed into service by communist cadremen and military units operating in their areas.

It was difficult for us to estimate the number of people in the local organizations. Virtually the entire rural population might have been involved to some extent at one time or another, however willingly or unwillingly. Certainly, the age limits appeared flexible, from the very young to the very old.

Occasionally, documents detailing the names and backgrounds of "liberation strugglers" would be uncovered or a knowledgeable defector willing to disclose the secrets of his previous associates would appear, but for the most part we depended on the estimates of our counterparts in the Army of the Republic of Vietnam (ARVN) who were notoriously inaccurate.

As often as not, we would assign rough estimates to reports of "local cadre." We saw our primary mission as fighting off the main force Vietcong (VC) and North Vietnamese units so that the ARVN could deal with the locals and bring peace to the country. We were not policemen. We were soldiers.

To the extent that we followed the locals at all, we usually rounded up or down in lots of 100 part-time soldiers for each unit or hamlet. The actual numbers, we realized, could have been as much as 100-percent higher or lower.

Rarely did we get a good fix on a village. When we did, we would use it as a model and adjust the other numbers up or down. Seldom were the figures regarded as much more than working hypotheses.

It is appalling that enemy organizational strengths based on such flimsy evidence should become the cause for a celebrated legal case. Much has been made of the point that enemy casualty rates were inconsistent with estimates of enemy strengths and infiltration rates. For the "small war"—the low end of the scale—this should be of little wonder.

If, for example, three VC were killed or captured in a village that we had estimated to harbor 100 part-time soldiers or military porters, it would not have made much sense to change the number of remaining enemy present to 97. We simply had no basis for such refinement.

I cannot help but feel that Gen. William C. Westmoreland, U.S. Army, retired, was victimized at both ends of the scandal. We who served him in the field probably did our share to confuse and mislead him at times with shaky reports. To that, I can only plead a certain preoccupation with the "big war" and with the health of one's own hide while the enemy was in the backyard blowing up the ammunition dump.

The coolest of statistics can become garbled when shouted over a field telephone to the din of the detonation of high explosives. But, certainly, the general got a bum rap at the hands of an unsympathetic media. I am not sure what CBS's excuse is. □

MAJ. GEN. EDWARD B. ATKESON, U.S. Army, retired, was national intelligence officer for general purpose forces, at headquarters, Central Intelligence Agency. He served as intelligence operations chief of II Field Force in Vietnam.



South Vietnamese local defense troops on the march: the village war was hard to quantify.

A Question of Professional Ethics

When to 'Fall on One's Sword'

By Lt. Col. David W. Owen

n the course of a wide-ranging discus-
. sion of professional military ethics that
ook place in a major European head-
uarters, the subject of "falling on one's
vord" came up in the context of the
erceived decline of the so-called profes-
onal ethic among members of the offi-
rs corps.

In order to give the discussion of this
tchy phrase a little more focus, the as-
mbled officers quickly agreed to define
alling on one's sword" as taking a posi-
on on a given issue and sticking to that
sition despite the likelihood of it be-
ming career threatening to do so.

Although no one in the group had the
edentials to say so authoritatively, the
neral belief was that the expression it-
f had its etiology in the tradition among
panese samurai of literally falling on
eir swords rather than betraying their
de of ethics.

The more the expression was discussed
its contemporary colloquial usage, the
re uncomfortable the group became.
e reason was that the shared personal
periences soon suggested to the partici-
nts that the phrase was almost invari-
y heard in the context of things that
re *not* worth falling on one's sword
er.

n fact, no one could remember any-
e falling on his sword over anything
ier than a personal issue like an unde-
ible assignment. Apparently, they con-
ded, officers did not fall on their swords
r substantive professional issues.

he temptation to try and rationalize
ay this disquieting conclusion was too
ng. The group members temporarily
nforted one another by observing that
he major or lieutenant colonel level,
e seldom are blatant challenges to
's beliefs or professional ethics.

n the process of discussing this propo-
n, however, it became painfully clear
the erosion of professional ethics
a subtle and insidious process rather
n a dramatic event.

onsequently, the officer who was un-
stionably prepared to refuse an un-
ful order to kill civilians in wartime,
example, or to falsify a readiness re-
, might well equivocate when asked
ork around regulations, soften a fully
ranted adverse efficiency report or
fy an unnecessary temporary duty.
loing so, he was laying the ground-
k for future compromises on more im-
ant matters as he progressed through
ranks.

The process of an officer's subornation was indeed subtle, but effective nonetheless.

To deflect some of the heat and discomfiture that their own observations and introspection were generating, one of the officers observed that falling on one's sword was not exactly in vogue among the military's senior leadership either.

The others quickly agreed and took turns cataloging some of the major problems that had confronted the military institution during the last decade or so but over which no senior leader, to their recollection, had fallen on his sword.

Issues like adequate housing in Europe and erosion of benefits were mentioned prominently. So was the perception that health, morale and family welfare items were often among the first sacrificed at budget-cutting time.

At what had obviously become the low point of this critical self-analysis, one of the participants, in an attempt to lighten the heavy atmosphere, identified what he thought marked the downturn in the code of professional ethics. The authorization for patent leather low quarters, he mused, signaled the end of the old value system. Form replaced substance, and the course of least resistance became officially sanctioned.

On this somewhat confused note, the group began breaking up with the participants wandering back to their respective offices somewhat the worse for the discussion.

What had begun as an honest and almost righteous attempt by a group of concerned officers to identify those others who were responsibile for the decline in the professional ethic had unfortunately led them to their own doorsteps.

It was more than enough to cause any real samurai to fall on his sword. □

LT. COL. DAVID W. OWEN currently serves as a Middle East specialist on the staff of the U.S. European Command Headquarters in Stuttgart, West Germany.

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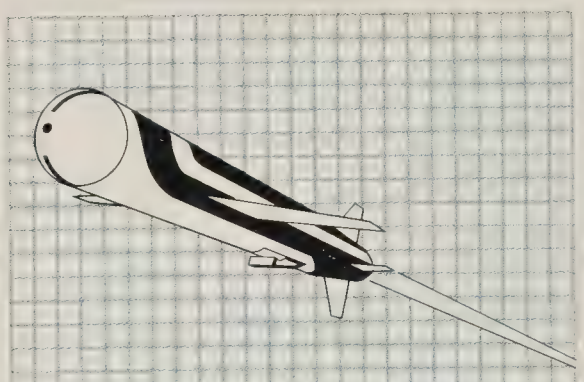
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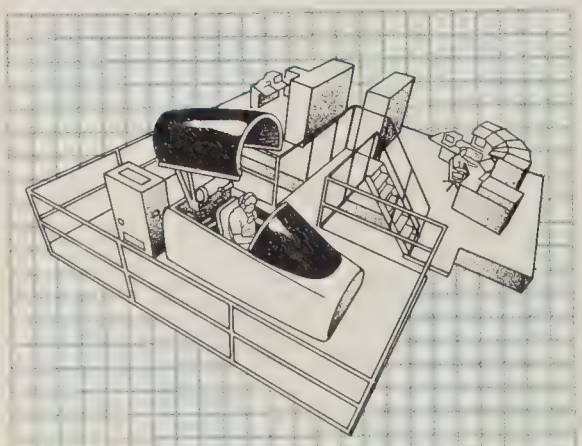
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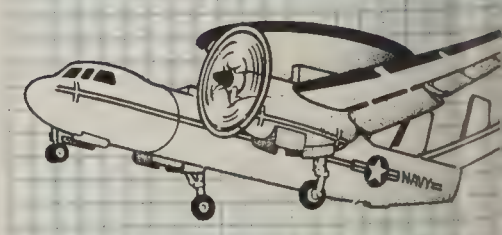
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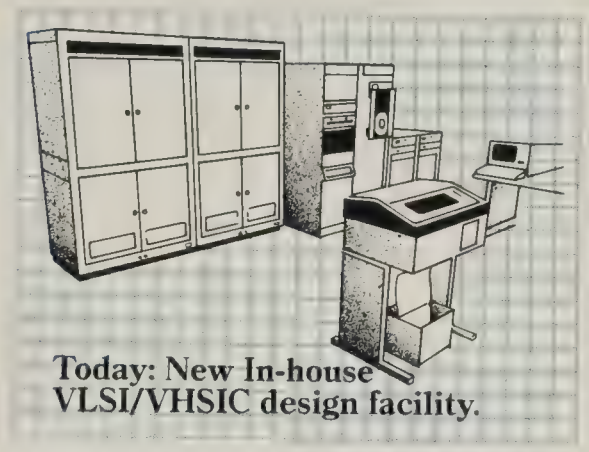


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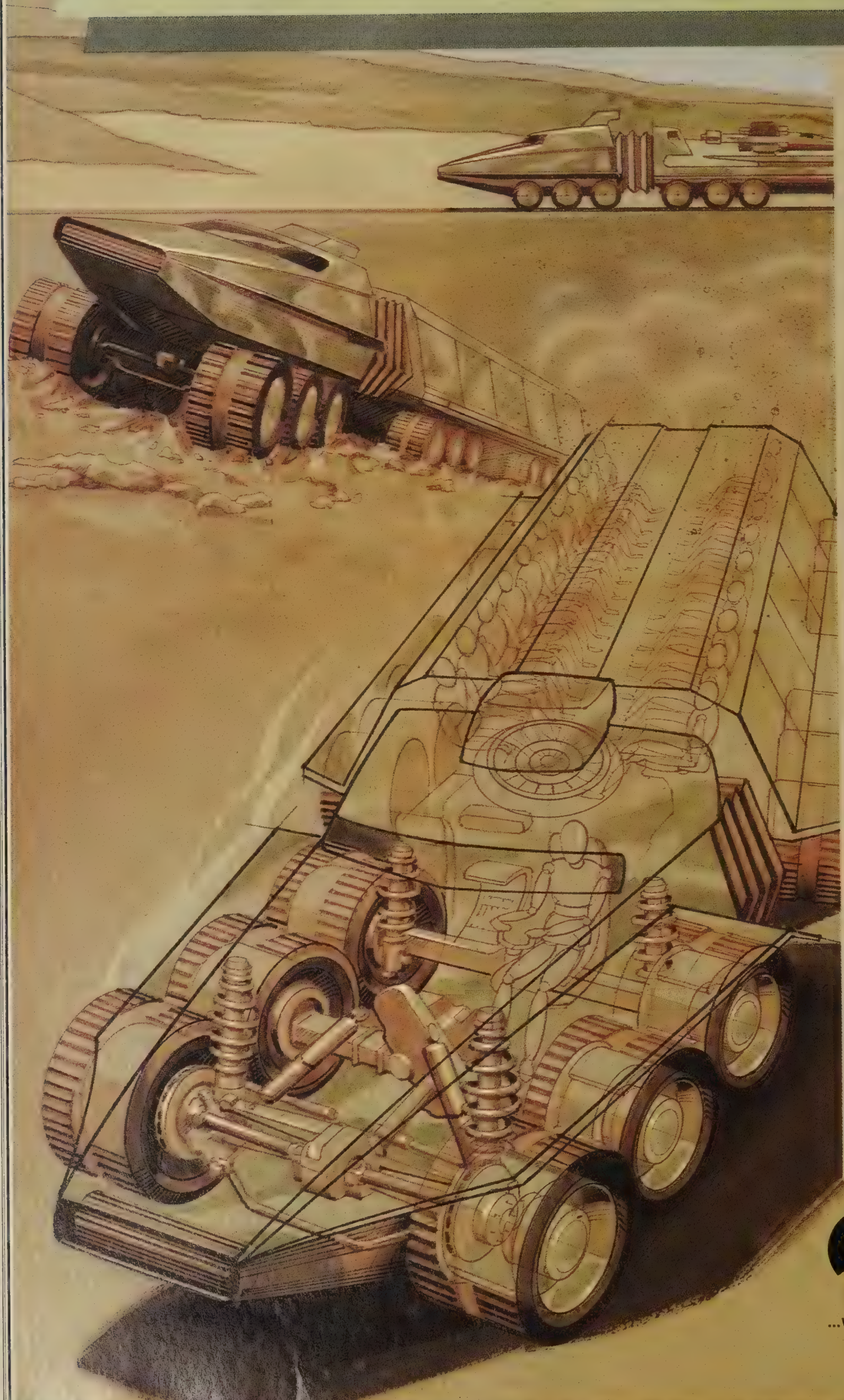
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More Thoughtful Assessment Needed

Rapid Changes Not Always Best

By Lt. Col. John G. Heslin

Changes that permeate the Army, from doctrine to administration, occur at an ever-increasing rate as new systems, policies and procedures produce new concepts which quickly become new doctrine only to be replaced all too rapidly. A "fever" for change bordering on the mentality of change for its own sake seems to exist.

To resist the wave of change is to run the risk of being labeled "negative," inflexible and unwilling to keep pace with the new Army of excellence. At times, however, it seems as if the Army is out of control.

Why must the Army rush headlong into implementation before fully assessing the wisdom of what it is about to do? Two examples of recent changes which, in time, may prove unwise are the implementation of the AirLand Battle doctrine and the rigid enforcement of the weight control program.

In the first instance, the Army has committed itself to a doctrine not fully accepted by its allies and not clearly supportable from a logistics point of view. It appears that an Israeli-type preemptive approach with its associated risks has been adopted while the wisdom of 30 years of clearly defensive doctrine in Central Europe has been forsaken. Is the Army forgetting that its stated mission is to defend; and that, if it leans too far forward in the saddle, some well-meaning commander may initiate action in order to be "proactive" rather than "reactive"? Perhaps Army leaders ought to rethink this doctrine in light of the collective wisdom of the community likely to have to live or die with it.



The second example has to do with the way the U.S. Army treats its soldiers. Is the crucial ingredient to success on the battlefield the performance of the soldiers, or is it something else? Are the soldiers being told that their performance is valued above all else, or that shortcomings in appearance may well offset years of outstanding performance?

When national survival calls for the ultimate test of battle, will the most competent performers be called? Will reservists who are overweight be activated? Will soldiers' awards for heroism be denied because the soldiers are a few pounds overweight?

If the Army intends to enforce the weight control program rigidly, then it has forgotten the wisdom of the ages and may well suffer the fate of other armies that looked good but could not stand the test of fire.

I am not challenging the value of change or proposing that the Army remain static as the world around us changes. Rather, my concern is with the way the Army changes. Frequent change without benefit of thoughtful reflection only causes more change as mistakes that could have been avoided are corrected.

Maybe it is time to slow the pace and allow collective wisdom to judge the value of proposed actions. Perhaps then the Army may achieve a broader consensus on its doctrine and greater consistency in the treatment of its soldiers. □

LT. COL. JOHN G. HESLIN has served in various aviation command and staff positions in the United States and Vietnam. He is currently with the Unit Training Directorate of the Army Logistics Center, Ft. Lee, Va.



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The Editors

Army's First Unit into Vietnam Marks Deployment Anniversary

By Maj. Gen. Ellis W. Williamson
U.S. Army, retired
and
Col. Lawrence W. Jackley
U.S. Army, retired

May marks the 20th anniversary of the first army combat formation deployed to Vietnam—the 173rd Airborne Brigade. The 173rd was born of a concept that small "brushfire wars" could be best dealt with by an elite, independent unit stationed permanently in the region of anticipated operations. The concept was never tested; the unit was, but in a manner not dreamed of by its creators.

In early 1963, the Department of the Army ordered the implementation of a new organization that in later years might be called a "mini-rapid deployment force." The idea was innovative and the new commander, then-Brig. Gen. Ellis W. Williamson, was to organize, equip and train a unique unit which would be a separate airborne brigade stationed on Okinawa and called "the Pacific Area Fire Brigade."

During the next two years, the 173rd Airborne Brigade redefined the word "innovation." The commander was given the authority to try any idea that seemed feasible and to adopt only what worked well.

The "Sky Soldiers," as Nationalist Chinese paratroopers called the 173rd, made thousands of jumps in a dozen different Pacific area nations. They experimented with the use of all types of aircraft, submarines and assault boats. Commanders were encouraged to be flexible as well as pragmatic. Units practiced the entire spectrum of combat operations.

As junior commanders became proficient in the basics, they were accorded a level of trust and authority that the Army teaches in the classroom but seldom practices in the field. This philosophy was to surprise allied officers during many combined exercises in 1963 and 1964.

Given this intensive preparation, the 173rd was the logical draw to be the first U.S. Army ground unit deployed to Vietnam in May 1965. Landing at Bien Hoa Airfield, the brigade found itself in an area battered frequently by enemy raids and shelling attacks. By nightfall of the first day, the Sky Soldiers had moved into the surrounding jungles, destroying prepared firing sites and disrupting Vietcong (VC) operations and plans.

For a year thereafter, not a single round of enemy fire fell on that airfield while the 173rd was there. The brigade maintained the initiative, keeping the enemy off balance and holding open the door for the influx of arriving Army units. The experience gained in two years of combined exercises with allied forces paid off as a battalion task force from the Royal Australian Regiment and a New Zealand artillery battery joined up with the brigade, remaining until the summer of 1966.

In the combat operations to follow, the paratroopers made their superb training pay off. They fought the battles of the Iron Triangle, conducted the first major unit combat jump in Vietnam (Junction City), decimated the main force VC units in Tay Ninh, and blocked North Vietnamese Army (NVA) incursions during some of the bloodiest fighting of the war at Dak To during the summer and fall of 1967, culminating in the capture of Hill 875.

After Dak To, the 173rd operated primarily in separate battalion formations ranging throughout the provinces of Binh Dinh, Phu Yen and Phu Bon, effectively sealing off the central Vietnam coast from major NVA threats. The Sky Soldiers fought small-unit battles to deny rice to the NVA, clear the principal routes through that area, and to find and destroy enemy base camps. It was a war of pursuit, based on the careful use of technical intelligence.

Elements of the brigade conducted an amphibious assault against NVA and VC forces as part of an operation to clear the rice-growing lowlands along the Bong Song littoral. In December, the brigad conducted operations Bolling II and Wall er, returning to the Binh Dinh–Phu Yen Phu Bon triangle.

From April 1969 to early 1971, th 173rd primarily supported pacificatio operations, with one battalion assigne to a district in northern Binh Dinh Pr vince. The paratroopers conducted smal unit patrols around the hamlets and su ported Vietnamese Army combat oper tions, denying population and rice-grov ing centers to enemy forces. The sizab number of enemy troops killed in actio the enormous amount of foodstuffs unco ered and the failure of the NVA to mou a major operation in the brigade's tactic area of responsibility were prime indic tors of the Sky Soldiers' combat succes

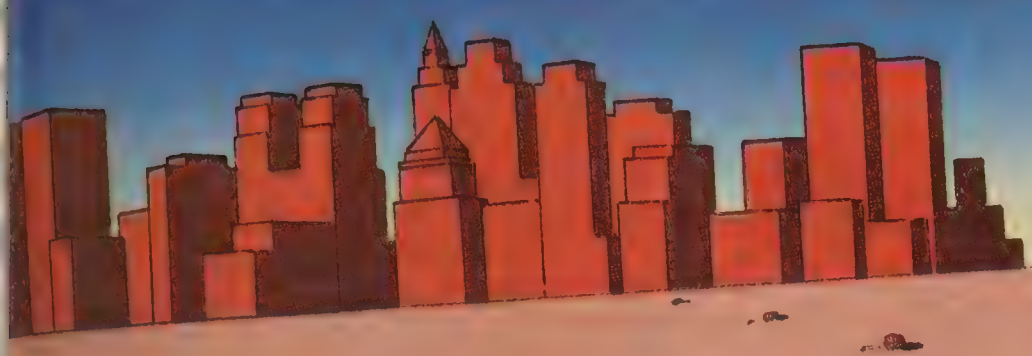
The 1st, 2nd, 3rd and 4th Parachute ba talions, 503rd Infantry, along with th 1st Mechanized Battalion, 50th Infantr constituted the principal foxhole streng of the 173rd Airborne Brigade during th period. They were ably supported by th 3rd Battalion, 319th Artillery, and th brigade's organic and assigned comb support units.

The soldiers of the 173rd wore the combat badges with pride, and the A my's records tell the story. During mo than six years of nearly continuous cor bat, the 173rd Airborne Brigade earn 14 campaign streamers and four Unit C tations—two U.S. and two Vietnames Its soldiers won 12 Medals of Honor ar other awards for valor and achievemer

The price paid for this dedication w high. The names of 1,534 Sky Soldie are carved into the marble of the Vie nam Memorial, and thousands of Purp Hearts were awarded to members of t brigade during those six years.



Troopers of the 173rd Airborne Brigade's Company A, 1st Battalion, 503rd Infantry, take cover during the battle of Dak To, in November of 1967.



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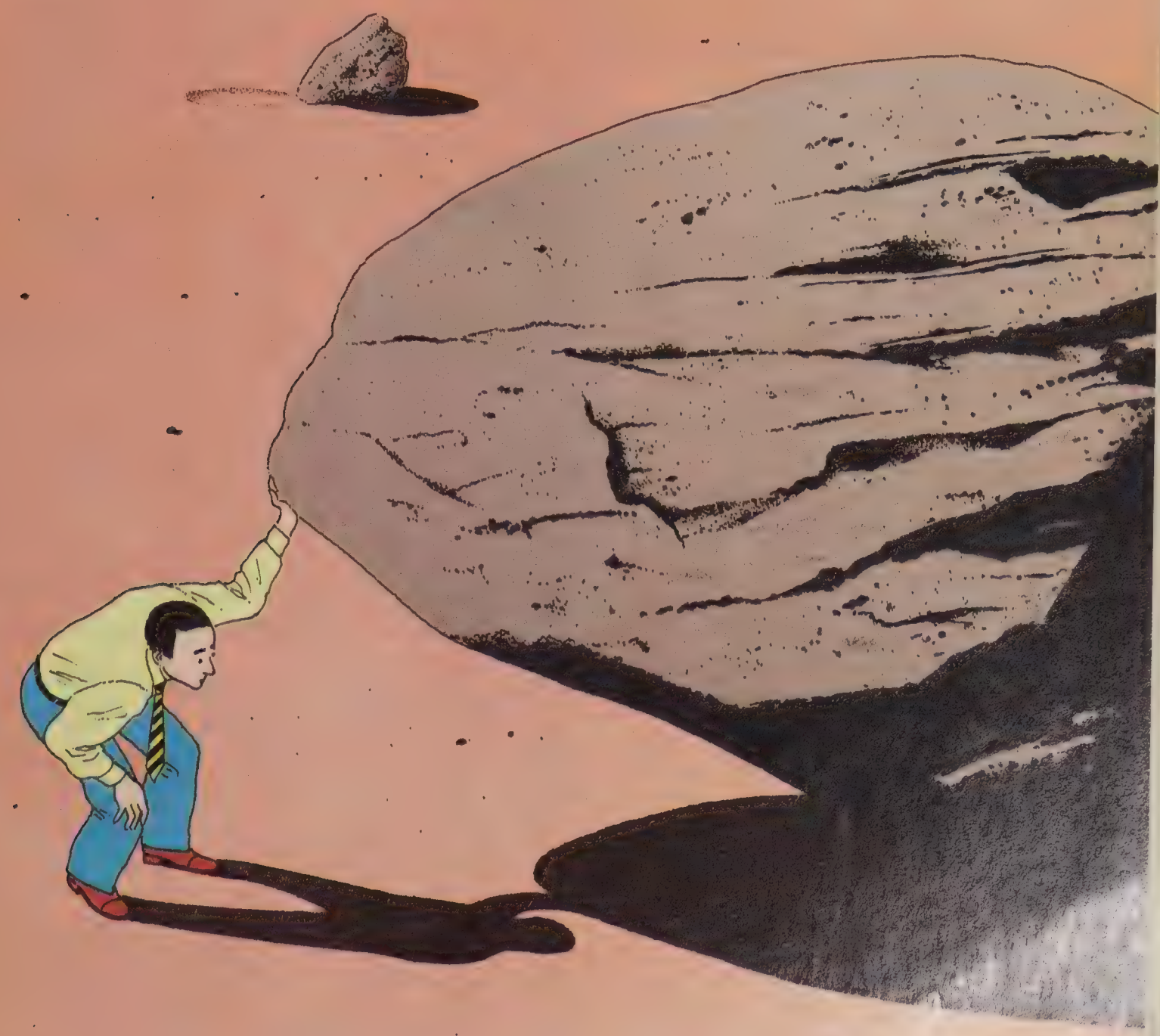
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Gen. Creighton W. Abrams, commanding U.S. forces in Vietnam, affixes a streamer to the 173rd's colors, emblematic of the Presidential Unit Citation the brigade won for Dak To; the ceremony took place at Landing Zone English, August 1969.

When the unit colors were furled at Ft. Campbell, Ky., in January 1972, a unique chapter in the Army's combat history was closed. Created to "quickly snuff out small brush fires in the Pacific," the 173rd Airborne Brigade spent its combat operational life at the cutting edge of the Army's Vietnam campaigns.

The profile of today's 173rd Airborne Brigade veterans is worthy of special note. Far from the media-hyped image of shell-shocked young men psychologically destroyed by the violence of the Vietnam conflict, most of today's former Sky Soldiers have made the full transition from Vietnam combat service to successful military and civilian careers. A large number are currently serving in or are retired from senior military leadership positions, and many of the brigade's veterans hold management-level positions in the private sector.

The enlisted veteran is well represented among these groups. One congressman, a deputy assistant with the National Security Council, an assistant secretary of the Army and the general counsel of the U.S. Information Agency are for mer Sky Soldiers.

This year, the Society of the 173r Airborne Brigade will commemorate th 1965 deployment to Vietnam. Member will gather in Washington, D.C., from to 5 May.

* * *

Gen. William C. Westmoreland, U.S Army, retired, is scheduled to be the so ciety's principal guest speaker. Interested former members of the 173rd may con tact the Washington, D.C., Sigholtz/Cap ital Chapter by writing Col. Ken Smith 6400 Whippany Way, Burke, Va. 2201 (703)455-0886. □

MAJ. GEN. ELLIS W. WILLIAMSON U.S. Army, retired, was the first com mander of the 173rd Airborne Brigade responsible for organizing and trainin the unit during its assignment on Ok nawa and through its first year of com bat in Vietnam. COL. LAWRENCE W JACKLEY, U.S. Army, retired, com manded the 4th Battalion, 503rd Infan try, from February to August 1967.

Goodies from the Home Front

By Robert A. Deckert



All right, women. The revolution is over. You have won.

I did not fully realize what my act meant until I had already sealed the package and put it in the mail. It is too late now to recall it, and I have spent the past several hours mulling over the extent of my surrender. That is what it was, of course, unconditional surrender.

My New England ancestors are undoubtedly rattling about in their rocky graves at the mere thought of it. My mother, if she had lived to see it, would have been perplexed at best; appalled is probably closer to the truth.

What my father's reaction would have been does not bear thinking about.

Granted, I am not exactly a rock-ribbed Maine conservative—my politics are a bit left of center. Still, I was brought up with traditional values. Men are men and women are women and all that. Men go to work and to war while women stay home and bake cookies for them.

Until today.

Today I baked a batch of muffins for my daughter who is in the Army.

How did a nice fellow like me ever get himself into a situation like this? It is not that I was ever a male chauvinist pig, you understand. I support the Equal Rights Amendment and I stopped offering my seat to women on the bus years ago (about the time my joints started creaking when I stood up, I think). But there are limits. It is hard to believe that my daughter is a soldier.

There were omens if I had been paying attention. When I took custody of my son after my divorce and started working at home, I took a step from which there would be no turning back. I thought I was prepared. After all, having married relatively late in life, I had taken care of myself for years. What was the big deal about taking care of a house and a kid? I soon learned.

While cooking, cleaning and doing the laundry were not problems, it was disconcerting to have to tell the woman from the Parent Teacher Association that I was the "lady of the house." It was disconcerting to hear my son tell friends, "My dad doesn't work, he just stays home all day." It was downright staggering to find myself swapping recipes.

I survived all that, but I was not prepared for my daughter's news that she had joined the Army. My little girl? Granted, she had always preferred blue jeans to dresses and climbing trees to playing dolls, but the Army?

It was not until the third or fourth letter from basic training that I really began to accept it. Even then, there were some bits of news that took longer to digest than others.

I could relate to her reports about 30-mile hikes and bivouacs. After all, the family had done some camping and hiking when she was growing up. And, having once been a sky diver (several pounds and years ago), I could even empathi with her desire to take paratrooper trai ing—to a degree. Sky divers, after a did not jump with full packs at low alt tudes. But how could I—who cannot eve load a BB gun—understand her prowe on the rifle range?

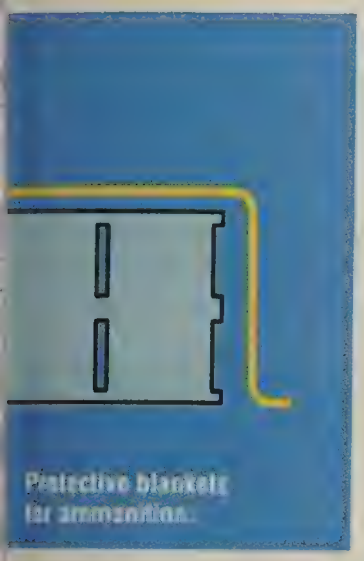
Then came the letter in which she hin ed that a care package of some hom baked goodies would taste good. Oh, wish I had given it a lot more thoug before I popped those muffins in the ove

Now what? Am I to be forever remem bered as the first man to stay behind an bake while his daughter went off to d fend her country? Must I live in her r flected glory as a soldier in this bra new world?

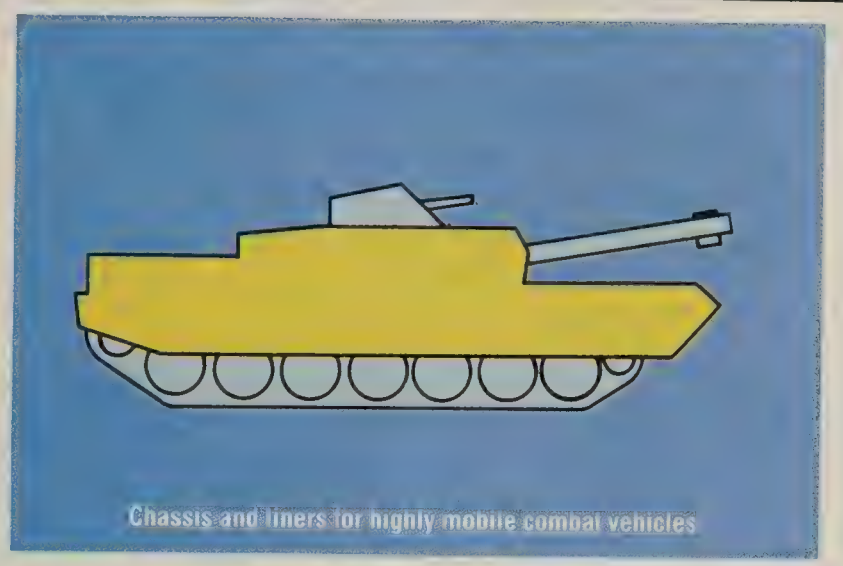
Never! I am going to form a new n tional organization, SPNOT, the Socie for the Preservation of the Natural C der of Things—just as soon as I get t goodies out of the oven. □

ROBERT A. DECKERT, a former neu man, is now a free-lance writer. H daughter, Sp.4 Karen Jeffers, is curre ly based in Honolulu, Hawaii.

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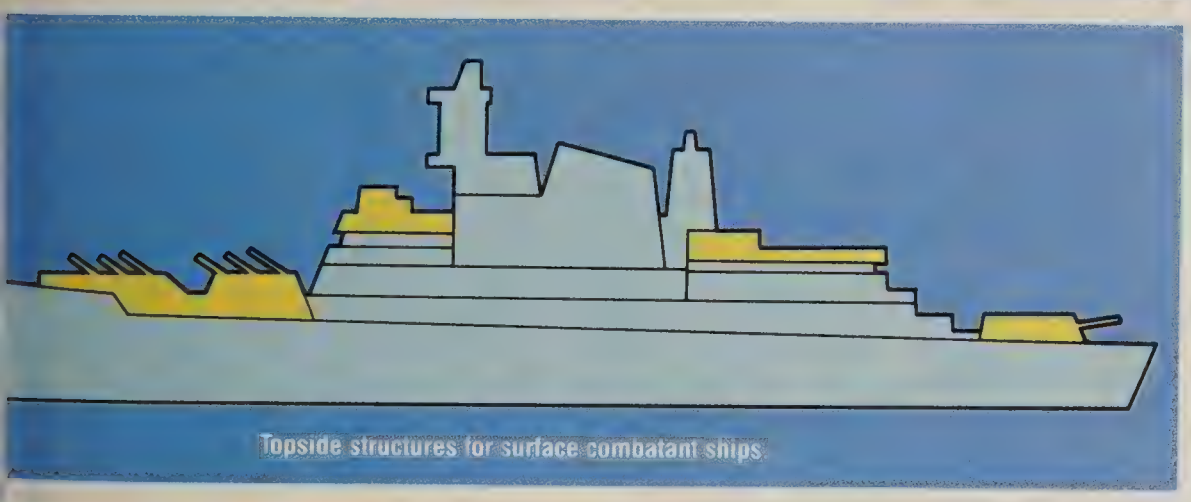
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A Report from Mujahedeen *Country*

Bloody Standoff In Afghanistan

By Paul L. Moorcraft

Afghanistan has been a battlefield for over 2,000 years, a pivot for a bloody chronicle of invasions. In 331 B.C., Alexander the Great thundered through the mountains of the Hindu Kush. White Huns, Turks, Genghis Khan, Tamerlane, Moguls and Persians followed. Throughout the nineteenth century, the Russians and the British played out their "great game" in the region. Supreme at sea, the British Raj wanted to control the overland route to India.

The British fought three Afghan wars and lost a complete army. Their first invasion was launched, said London, to stop "foreign interference." Using the same excuse, the Soviet Union sent its tanks rolling over the border in December 1979.

Since 1945, the Red Army has been in the habit of rapidly smashing opposition, but for more than five years, the Afghan resistance has withstood Soviet aggression. Afghanistan is not Poland, Hungary, East Germany or Czechoslovakia. The Soviets are learning the same lesso as the British before them: defeating a controlling Afghans are two entirely d ferent feats. The ungovernable Afgh tribesmen have simply never learned su mission.

The conflict is not the Soviet Unio "Vietnam," however. The Soviets are figh ing on their own doorstep. Public opi ion is not a major factor. Above all, is not a media war. Few American fil teams get to the heart of the fightin Covering the war is risky, and tea must be prepared for days of long, ha marches.

No helicopters commute to the batt



The Soviets are not being hurt badly enough to consider leaving, yet the resistance manages to sustain itself, despite few weapons, little training and the lack of any central political or strategic goal.

fields, as from the plush hotels in Saigon. It is not a popular war for journalists. Afghanistan is not accessible like Lebanon either; the Soviets make sure of that.

Afghanistan is divided into three parts: the high mountain ridge in the center rising above fertile valleys, the vast plateau with oases to the north, and the deserts and semideserts toward the southwest. The central mountain range—the Hindu Kush—virtually cuts the country in half. Long before the invasion, the Russians had been building roads and tunnels to surmount this obstacle.

Afghanistan is the key to the control of Central Asia—it abuts the Soviet Union, China, Pakistan and Iran. Its physical inaccessibility meant that, outside Kabul, the twentieth century had bypassed the country. A tribal society exists in the rural areas, with each group fiercely defending its independent traditions. Afghan tribesmen strongly dislike *any* government, let alone a communist one backed by foreign infidels.

In the south, the people are mostly Pathans; in the north, Tajiks, Turkmen, Kirghiz and Uzbegs; and, in the central mountains, Hazaras. The tribesmen are like their land: harsh, noble, unpredictable and brutal. The main unifying factor is Islam. Belief in God and country amount to the same thing for Moslems.

The invasion has created a new sense of outraged nationalism. The *jihad*, or holy war, was declared before the Soviets sent in tanks. Attempts at land reform and improvements in the status of women had incensed rural conservatives, both landlord and peasant, in this backward country where 90 percent of the 19 million population are illiterate.

Local religious leaders saw that socialist centralism would deprive them of their authority, so the *mullahs* whipped up religious sentiments. The arrogant attitude of the Soviet conquerors made matters far worse.



Photos by the author

A contrast in means: Soviet aerial bombs (below) *plaster a guerrilla supply route in the Jagi Valley;* at right, *a resistance messenger on horseback, a key link in a poor communications system.*





Although Afghanistan is ideal guerrilla country, the tribesmen are not natural soldiers. As elsewhere, a good soldier is a trained soldier. Because the tribesmen are convinced of their innate martial qualities, they are reluctant to be trained.

They spend as much time praying as working out tactics or maintaining their weapons. They hate orders. Their incompetence in technical matters is only surpassed by their faith that technology will solve all their problems for them.

They waste ammunition, often because of accidental discharges. The film team members this author led into Afghanistan in 1984, all professional soldiers before becoming journalists, were more concerned with being hit accidentally by their hosts than with being killed by the Soviets or their allies.

We witnessed mortar bombs being lobbed without priming, ill-maintained weapons jamming in battle, land mines being tested by jumping on them, frequent refusal to obey orders and poor coordination between various guerrilla groups.

After I voiced a complaint about some of the deadly tactics of the guerrillas, our cameraman, a former Rhodesian soldier, turned to me and said plaintively: "If you can't take a joke, you shouldn't be in Afghanistan."

For the Soviets, the war is no joke. Although the Red Army controls the cities, towns and, crucially, the air, the guerrillas, or *mujahedeen* (warriors), dominate perhaps 80 percent of Afghanistan.

Despite their glaring inadequacies, the *mujahedeen* have kept a superpower at bay, leading many in the West to think that this insurgency marks the turning of the Red tide.

This may be an illusion, however. Despite their faith and stubborn refusal to submit, the guerrillas are becoming war-weary. Besides their poor training, the *mujahedeen* sometimes spend as much time ambushing each other as fighting the invaders. Tribal feuds run deep and last many years.

Fierce individualism is the guerrillas' main strength and weakness. A stron figure has not emerged to provide effe tive, centralized leadership. Peshawar, th capital of Pakistan's North-West Frontie Province, plays host to a wide variety guerrilla groups in exile ranging from e centric royalists to fanatic Maoists.

Many of the leaders are pompous win bags, as perhaps befits this city of famou storytellers. The most effective grou have formed two loose coalitions: an a liance composed of Islamic fundamenta ists and another more moderate allianc They spend much of their time intriguin against each other.

The Peshawar parties do, howeve provide some contact with the outsi world as well as channels for funds an arms. Afghan leaders exhibit a strang duality concerning outside aid. On th one hand, they say they do not want t be dragged into a superpower sluggin match for propaganda purposes, whic they pay for in Afghan blood. They eve blame foreigners for most of their prob lems.

Yet, at the same time, they look t outside powers to support and pay f their resistance. They feel that Pakista takes as much aid as possible while d ing as little as possible to help. China

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PAUL L. MOORCRAFT is a journalist and university lecturer on international relations, politics and history. A former senior instructor at the Royal Military Academy, Sandhurst, he has written several books and has recently produced films on Morocco and Afghanistan.



This guerrilla fighter (left) *carries a British No. 4 Lee–Enfield .303 rifle, still common in Afghanistan.* Below, *a heavy machine gun, its tripod and other weapons packed on horseback as a resistance column moves out.*





The author's film team pauses at a roadside tea house (left), *typical of those serving as way stations on guerrilla supply routes.*

imed for backing its strong criticism of e Soviet Union with only limited supes of arms to the *mujahedeen*. Such ping from a chronically disunited pocal leadership has done much to unmine international credibility as well operations in the field. Recently, hower, conditions have improved.

Local commanders actually doing the hting, not the talking, have become kened by the Peshawar politicians and ve forged working coalitions in the d. Able leaders such as Herat's Ismail Khan, Kabul's Abdul Haq, Wardak's Amin Wardak and the Panjshir Valley's Ahmad Shah Massoud have cooperated with commanders of rival parties to wage a sustained insurgency which has resisted concerted Soviet efforts to destroy them.

These leaders have organized training inside the country and have established full-time fighting units, whereas many of the part-time *mujahedeen*—and these might number as many as 150,000 men—regard operations as a highly individualistic ritual performed on a whim or to save face according to their strict code of honor.

The intensity and tide of the war varies immensely. The conflict in the Tajik-inhabited highlands of northern Afghanistan often bears little resemblance to that of the Pushtun region of the southeast. A heavy Soviet offensive, feuds or the death of a popular commander can alter local conditions in a few days, although the news may take weeks or months to get back to guerrilla headquarters because of poor communications. A major deficien-

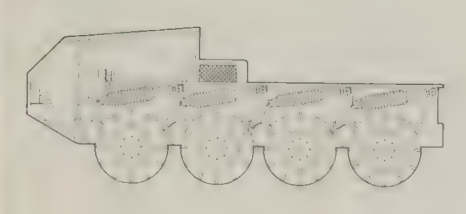


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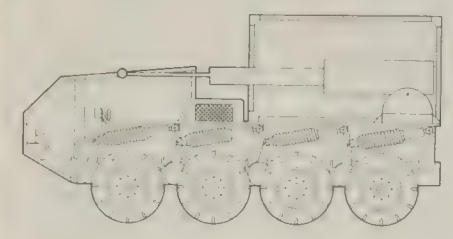
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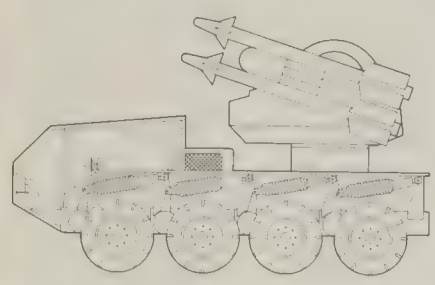
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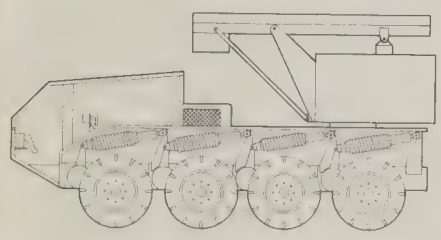
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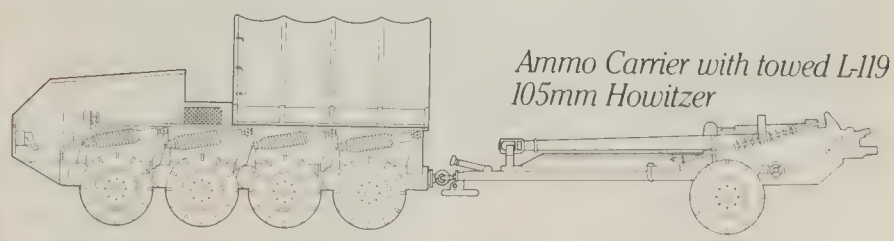
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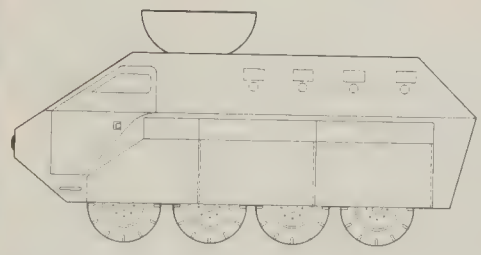
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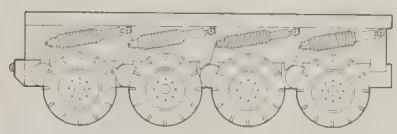
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cy is lack of radio communications.

In 1984, the Soviet Union stepped up the pace of the war, and the guerrilla backers in the West and the Islamic world realized that without improved weapons such as surface-to-air missiles (SAMs) to combat the Soviet gunships and the training to use them properly, the *mujahedeen* would face defeat.

The guerrillas capture some weapons from the Soviets and their Afghan allies in the demoralized regular army and the poorly trained militia; some are brought over with defecting communist troops as a kind of passport to guerrilla acceptance; others are bought in the black market, sometimes from Soviet troops. Earlier in the war, a large number of surplus Egyptian and Chinese weapons reached the *mujahedeen*, some of whom had been fighting with ancient rifles.

By early 1984, the basic weapons in use were the AK-47 (both Chinese and Soviet), the RPG-7 and Chinese land mines. SAM 7s were rare and, when employed, often failed to function. The main antiaircraft weapon is the 12.7-mm DShK, called "Dasheka" by Afghans, which has brought down the deadly Mi-24 Hind gunships.

Gradually, better and more modern equipment, ranging from the AK-74 to an improved version of the SAM 7, has been reaching the insurgents. Nevertheless, officials in Washington feel that a large portion of the estimated $1 billion supplied by the United States, Saudi Arabia, China and Pakistan since 1979 has been wasted. American experts now are looking to an "aid according to results" scheme.

The guerrillas have progressed. Better coordination in the field in some areas, training programs and more modern arms have brought a semblance of order to the ragtag regiments of Islamic warriors. The Soviets have also learned from the war. They are now hitting harder with ruthlessly successful tactics.

Initially, the Soviets seemed to concentrate on hearts-and-minds campaigns and left the *mujahedeen* to the deserts and mountains, chased by gunships. Oddly, the Marxist-Leninist-trained Red Army seemed incapable of fighting a political war, so now they are using their crude military power.

In a calculated form of genocide, the Soviets are bombing the southeastern areas of the country daily in order to drive out the peasants, who feed the *mujahedeen*, and to stop their supply columns. Without a sea, as Mao Tse-tung would have said, the guerrilla fish must expire. The refugees thus flee to the Soviet-controlled cities or to Pakistan to overstrain local resources, patience and tempers.

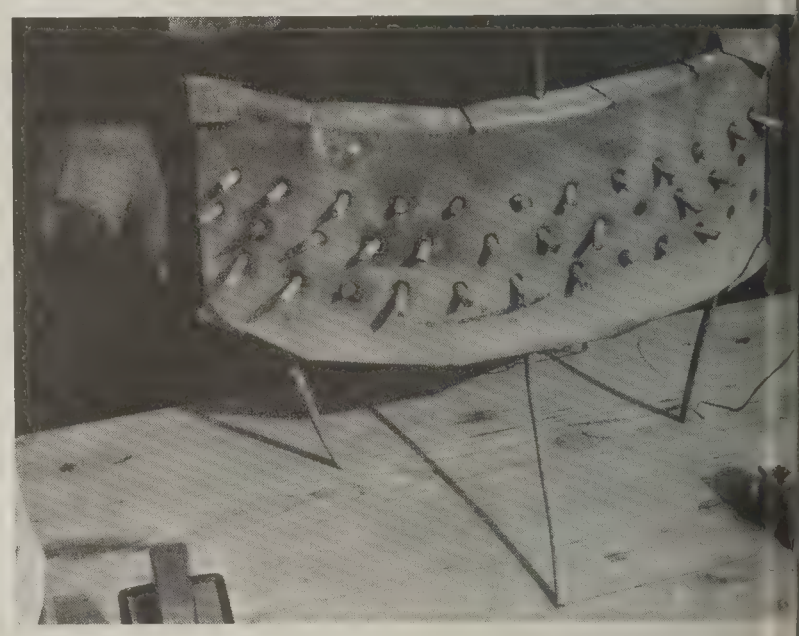
I witnessed, on a number of occasions, the bombing of civilian villages by Soviet aircraft. The house where the film crew had stayed earlier was hit and a family of eight was killed. This occurred in the Paktia Province near Kabul. One 1,000-pound bomb landed two feet from a shelter where 40 women and children were hiding. It failed to explode, as did a number of other blockbusters dropped near us. The villagers praised Allah for their deliverance.

The filming took our teams three times behind the Soviet lines, twice in the north and once in the deserts around Kandahar. Two of our teams were caught in a major offensive around this sprawling city. Although they managed to escape using scrambler motorbikes, Jacques Abouchar, who left the Pakistan town of Quetta a the same time, was injured and capture

The French journalist had been tracke by KGB agents in Pakistan and deliberat ly ambushed. His trial and 18-year se tence were staged as a warning to discou age foreign journalists from entering t war zone. His release, after French go ernment intervention and a mock displa of Soviet humanitarianism, was viewe as a last warning to the Western pres

Soviet forces recently used long-ran bombers for the first time. Reported u of 5,000-kilometer-range Badgers and 3,00 kilometer Fencers on the Panjshir stron hold of Ahmad Shah Massoud sugges a further escalation. More ominous is t increasing violation of Pakistani air spa and the bombing of civilians in Pakistar tribal areas.

Until the offensive of 1984, there w a general feeling among close observe that the Soviets were not really tryin Perhaps they were still concerned abo





At right, *a crude ambush-type antipersonnel mine made by the guerrillas.* Below, *the ruins of a house destroyed by Soviet fighter-bombers shortly after the author's team enjoyed the hospitality of the owners; the entire family was killed.*

world opinion, especially in the Islamic Third World. Perhaps they hoped their political campaign would win, and that continued moderate attrition would eventually tire the resistance.

In July 1984, I witnessed an example of the Soviet failure to go for the jugular. Our crew was caught in the open on a hill in Jigdalek, not far from the capital, Kabul, by two Mi-24 gunships. As the deadly flying tanks dropped down on us, we threw ourselves into a small ditch, and the cameraman used my back as a tripod. We thought we were about to film our own demise.

The two helicopters then circled as four MiG-21s wheeled gracefully in the sky and bombed the valley below us. Despite obviously sighting our group of 50 exposed guerrillas, and the chatter of



A tripod-mounted 12.7-mm DShK heavy machine gun (below), *the main resistance antiaircraft weapon, in action against Soviet Mi-24 attack helicopters.*

A guerrilla fighter with an armload of RPG-7 antitank rockets.





A Soviet BTR-60PB wheeled armored personnel carrier knocked out during fighting in the Jagi Valley; the hulk has been stripped of all weapons and usable equipment.

a Dasheka machine gun, the choppers ignored the lush target. An American or South African gunship crew would have dropped napalm or used their cannon in similar circumstances, but the rigidity of Soviet planning often forbids initiative or the ability to snap up a target of opportunity.

The Soviets, however, are now beginning to deploy their 150,000 occupation troops more effectively. They have improved on their overuse of armor, which depended on a strategy for fighting a war on the flat plains of Europe. Crack airborne troops more attuned to mountain warfare are being used to good effect.

Naked force cannot replace the lesson taught by Karl von Clausewitz and Lenin: the need for a political goal. The Czarist and Bolshevik expansions into Moslem areas had employed carrot and stick, winning support from major sections of the populace. The Soviets have played the arrogant imperialists in Afghanistan and have alienated everyone, including members of the two squabbling Afghan communist parties.

Except with the mailed fist, Soviet writ extends little further than Kabul and one or two central city areas in other regions. As author John Fullerton put it so succinctly: "This is not the People's Democratic Republic of Afghanistan, but Some People's Divided Republic of Kabul."

Soviet soldiers are told that they are being sent to the country to help heroic Afghans defend their birthright which is being threatened by "American imperialism, Chinese chauvinism and Pakistani militarism." Instead, the demoralized conscripts are met with Afghan hostility, not least from their allies in the Afghan regular army which has declined from 80,000 to around 40,000.

Many Afghan conscripts defect with their guns because they regard dying for communism a particularly "dirty death"; their fellow Moslem opponents are told that dying for the *jihad* guarantees them a place in paradise. Faith is a powerful weapon.

The Soviet generals will not allow the personal views of their conscripted fellow countrymen to sway their strategies. Indeed, they have turned angrily on the politicians in Moscow for trying to hush up the Afghan war; "war" is a word never used in Moscow's Afghan vocabulary. Soviet military newspapers have played up the heroic exploits of Soviet troops, and the activities of the guerrillas are portrayed clearly as more serious than the brigandage depicted originally.

The Soviets intend to stay in Afghanistan as long as necessary. They have no blundered into their Vietnam, as mos Westerners seem to think. They can hol Afghanistan militarily as long as the Brit ish Army can control Northern Ireland The costs are comparable to the respec tive defense budgets. The occupation wa an unfortunate—for the Soviets—exten sion of a long-term strategy, although th costs have proved higher than expecte for the Kremlin.

To assume that the United Nations ca negotiate a Soviet withdrawal soon is t show a touching faith in fairies. The wa goes on, and so does the casualty rate The Soviets have suffered at least 20,00 dead and wounded; others have suffere from illnesses such as hepatitis, whic seems endemic among Soviet troops. Af ghan communist troops must have en dured even higher attrition rates becaus the Soviets push them into the front a cannon fodder to face their co-religion ists.

As in all such wars, the civilian is th chief victim. Afghan *mujahedeen* leader told me that at least half a million inno cent civilians along with guerrillas hav been killed or wounded. That figure seem inflated, but a large percentage of th wounded die on the long trek over th mountains to the refugee camps in Paki stan or Iran.

I witnessed medical operations in th field with little or no medical supplies One exasperated guerrilla doctor told m that, although he is trained in twentieth century medicine, he is forced to operat



A heavy machine gun (left) *is emplaced as antiaircraft protection during a halt on the march.*



Mujahedeen *raise their weapons in a cheer* (right) *after engaging Afghan Army troops and militia in fortified positions.*

under conditions similar to those of the Middle Ages.

Some of the wounded go back to fight, others end up in the refugee camps. The exodus began as a trickle after the 1978 communist coup in Kabul; today it is a torrent. According to London's International Institute for Strategic Studies, four and a half million displaced Afghans live in Pakistan and Iran. Most exist in the three hundred refugee camps which dot the border areas of Pakistan's North-West Frontier and Baluchistan provinces. Both international relief agencies and Pakistan must try to feed and accommodate the influx. Water is scarce.

In one camp I visited in 1984, over two hundred children died in one month from drinking polluted water. Disease is rife and food, despite the agencies' best efforts, is often meager. Sometimes the food does not reach the most needy in the camps.

As with the Palestinian refugees, a new generation is being raised in bitterness. It will take a long time to compromise or redeem the blood feud with the Soviet Union. Yet, the greater the pressures on the volatile politics of Pakistan, the greater Moscow's leverage to make concessions to Afghan President Babrak Karmal's regime in Kabul. This will be a difficult war to end politically or win conclusively for all parties involved.

The Soviets have three options: pull out, try harder or allow the present stalemate to continue. Pulling out could have massive repercussions on Eastern Europe as well as the Moslem areas of the Soviet Union, and so a unilateral exit is highly



Cleaning a well-worn AK–47 (above).





The film team's equipment is packed over a high mountain trail animal transport is about all that is available to the guerrillas.



Looking over the foothills of the Afghan border to the plains of Pakistan beyond.

unlikely. If the Red Army went all out, particularly by extending its present cordon-and-thump tactics into full-fledged free-fire zones along the entire border, it could win in the military sense, but at a great cost to its crumbling political base in Kabul, let alone in the Third World, and to Moscow's arms negotiations with Washington. The present stalemate—gradually intensified—is the likely choice. Time seems to be on the Marxist side.

Despite their self-help efforts, the Afghan guerrillas are hard pressed. Civilians have voted with their feet by getting out of the combat areas. This is a major problem in the Panjshir Valley, where even Ahmad Shah Massoud had to buy, or lose, time by agreeing to a truce. Now, the Soviets have tightened the siege around his battle-hardened troops.

Even with a plentiful supply of modern weapons, the old thorns still remain. The holy warriors must work out their fundamental dilemma: to fight a modern war they must give up their instinctive individualism and tribal ways—the very things they are fighting communism to defend.

American policy also must reconcile its contradictions. Some Westerners argue that the Afghan socialists were trying to introduce worthwhile reforms—education for women and land redistribution—even if the costs of Soviet-style totalitarianism are too high. They recognize that the guerrillas have the right to fight for national independence, but that would mean the right also to turn the clock back to medieval conditions, especially for women in the countryside.

Many of the *mujahedeen* have the same aims as Iran's mad *mullahs;* with the hostage crisis still fresh in many minds, this sends shivers down the backs of even the staunchest anticommunists. Some hardliners want to pump in aid to the insurgents, to make the Soviets pay a hard price for the occupation. They advocate a large supply of SAMs so that the Soviet Union would have to cut back on their successful gunship strategy and use costly and cumbersome infantry in greater numbers.

However, this means greater reliance on the dictatorship in Pakistan—already a sore point for liberals because of the issues of nuclear ambitions in Islamabad, a poor human rights record and the large amount of local heroin getting to the West, let alone the likely détente in Indian–American relations in the post-Indira Gandhi political flux.

Washington has already taken some missteps. It failed to substantiate adequately its accusations of chemical and biological warfare waged by the Soviets in Afghanistan. In this, the Administration managed the incredible: it maneuvered itself onto the defensive in a propaganda war that it should have won.

The United States cannot stand back from the Afghan crisis. This long-running insurgency could be the trigger to a major conflagration between the Soviet Union and the House of Islam, which must drag in U.S. interests in the Middle East as well as Asia. America's ally, Pakistan, is under great stress.

The old specter of provincial separatism still lurks, a perennial lever for the Soviet Union. And the unruly tribal areas that snake along the 1,500 miles of the northern borders could erupt into Lebanese-style faction fighting if the war continues to spill over from Afghanistan. Other neighbors, especially China and Iran, stand to risk a great deal, although they might also opt for short-term gain if the war escalates.

The Soviet Union, meanwhile, is not going to repeat its retreat from Austria in 1955 in exchange for that country's neutralism. Originally, Moscow might have accepted the so-called "Finlandization" of Kabul. But now, as the British *Guardian* put it:

> A mildly Soviet-oriented regime, following the direction of its old trade links and its new highways, would preferably suit the Russians well enough, but can they have that now that Afghanistan has been auctioned up into a collector's *objet d'art* far beyond its intrinsic value?

Both Moscow and the Moslem fundamentalists in Peshawar and Islamabad have learned something. While the Soviet Union's opponents have learned that an replacement in Kabul will have to be regime sympathetic to Moscow, the Kremlin now understands that governing Afghanistan without the consent of at least most of its disparate and stubborn tribes is impossible.

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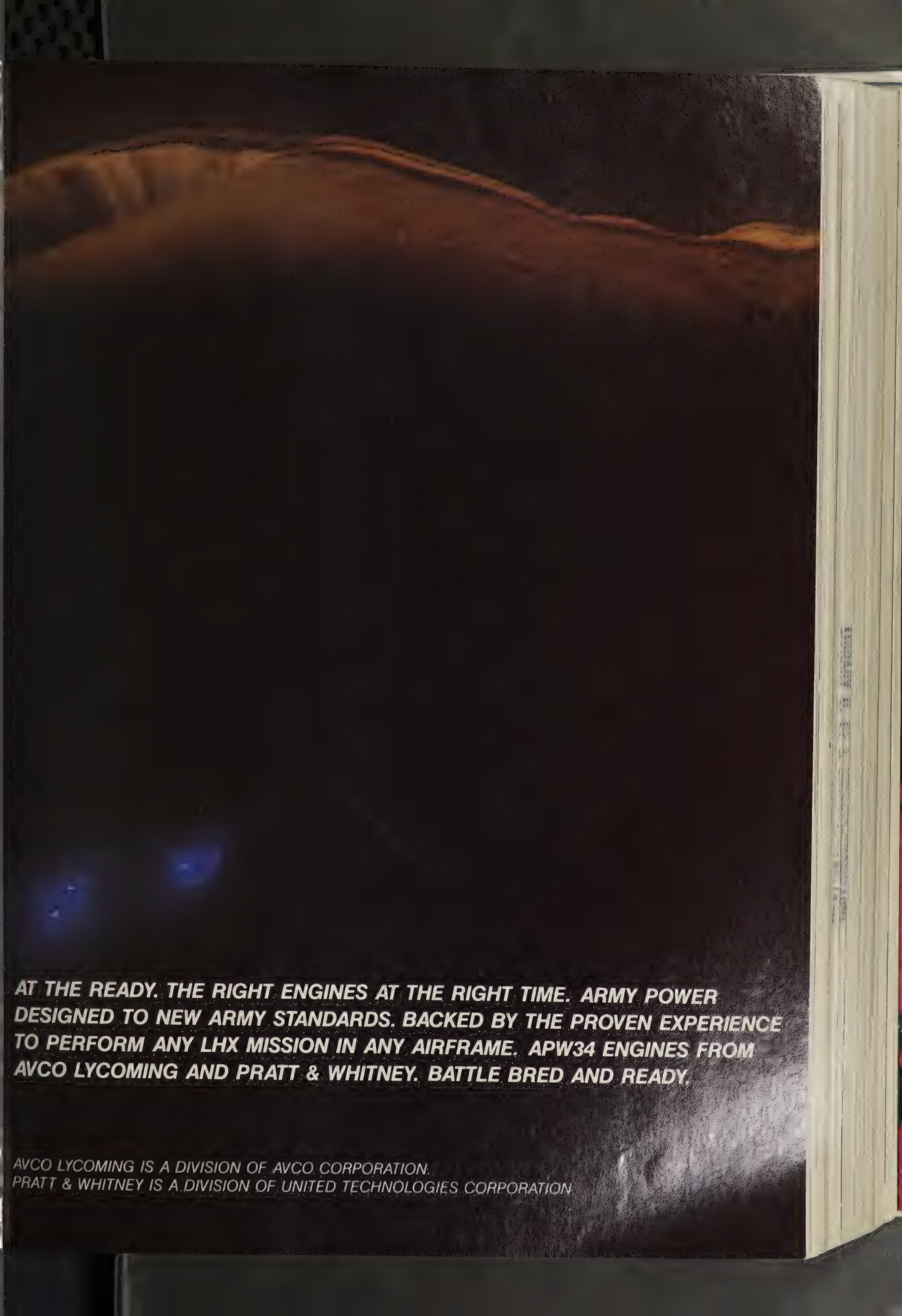
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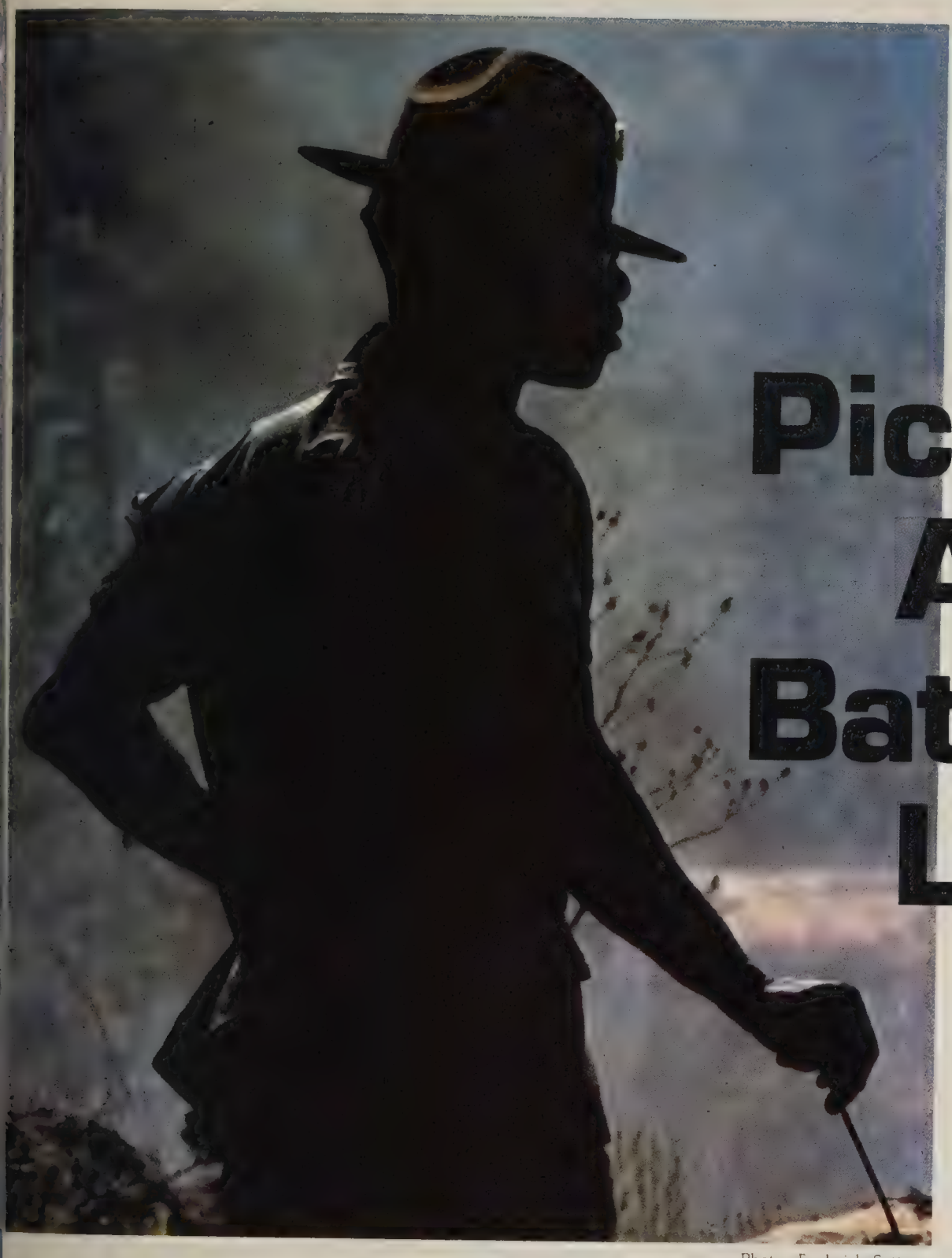
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Picking AirLand Battle's Leaders

By Maj. Robert L. Maginnis

Photo: Frederick Sutter

As the technical requirements for leadership change, the Army can no longer trust past standards in selecting combat commanders for the demanding battlefield of the future.

The U.S. Army has historically selected future leaders by comparing their past performance with a performance standard for leaders established during the most recent wars. This may not be in the Army's best interest because past wars may not be a prologue to future wars. It follows that past demands on leaders may not be a valid reference point for future demands.

The complex demands on George Washington's leaders and those of the twenty-first century may include significant differences and similarities. Leaders from both periods require effective communication and decision-making skills, and the ability to influence subordinates to do what is difficult.

The differences are in terms of decisiveness, allowance for error, sophistication of weapons and the battlefield environment. Future leaders must have all the fundamental leadership skills that were indispensable in the past, in addition to a degree of skill maturity heretofore not required of the leadership corps.

There is no credible evidence to suggest that the leaders of George Washington's colonial army possessed less of the "matured" complex leadership skills than do soldiers today. There is little doubt that future warfare will be more complex than in 1776; therefore, it follows that leader selection and development should be more thorough and demanding than at any point in our history. A process for selecting and developing future leaders should be accurate and cost-effective.

One process—leader assessment—compares the leader's abilities, skills and behavior against the anticipated requirements of the leader in a specific job and

environment. The objective is to provide a comparison between the job's requirements and the leader's assets. To accomplish this comparison, the job and environment must be thoroughly analyzed.

This analysis (particularly for the AirLand battlefield leader) is dynamic; as technology changes, so do the requirements. The identified skills and their associated maturity become the assessment standard. The complex leadership skills of the person assessed are then compared with that standard.

Effective combat leader performance requires properly matured leadership skills (which are identified by a skill analysis), a thorough appreciation for the requirements of the leader's combat role and an appreciation for the dynamic AirLand Battle environment. The leader who balances all three has the best chance for success.

How effectively will today's leaders perform on the AirLand battlefield? We cannot answer this question without a valid comparison of current performance and future demands.

If the Army knew the level of maturity of leadership skills required by the battles of the future, it could then compare them to current assets and make the appropriate adjustments. However, an information barrier hinders a comparison of the two realities. The only way to make a valid comparison is to remove the barrier or work through it.

The information barrier represents the inability to successfully predict future demands on leaders. This is not a new problem. Ancient commanders had staff soothsayers who advised the commander on the correct plans and routes. Although the Army's "clairvoyant" skills are more scientific, they are still far from exact. The Army plainly cannot predict the future all that well.

The barrier can become surmountable by using a two-pronged "scientific" approach. First, the leadership requirements for the AirLand Battle must be visualized. The requirements can then be captured in Army doctrine and articulated so that they can be measured. This process requires detailed study of both Soviet and allied tactics and doctrine. The "how to fight" concepts, as well as the current weapons systems, can then be simulated in such a manner as to suggest future demands.

Second, leader assessment techniques should be harnessed to assist Army personnel managers in working through the barrier. If properly used, assessment techniques will improve the Army's ability to recruit the right people, train them and maximize leader performance for the future battlefield.

There are two fundamental types of assessment: selection and developmental. The use of assessment for selection purposes dates back to the Civil War when President Abraham Lincoln chartered a commission to assess applicants for regular Army officer appointments. He convened the board to "examine into the capacity, qualifications, propriety of conduct and efficiency" of candidates.

In 1916, the National Defense Act gave the President the power to establish the Reserve Officers' Training Corps (ROTC). This led to the creation of the ROTC and an assessment system for selection.

Using the British War Office Selection Board model (and the assessments conducted at Pemberly, England), the Office of Strategic Studies used assessment techniques to judge who should become a member of America's spy network. Hired experts assembled tests and exercises to help judge candidates. Their efforts were marginally successful.

From 1961 to 1963, researchers at Ft. McClellan, Ala., tried to assess the combat leadership potential of officers. They concluded that valid factors of leadership behavior, notably combat leadership and technical managerial leadership, could be determined in an assessment center setting.

A study was conducted in 1973–74 at Ft. Benning, Ga. Approximately four hundred leaders were assessed and then returned to Army units. Their progress was monitored closely over the following 18 months. The officials concluded that leader field performance can be predicted with significant reliability.

Assessment can also be used for developmental purposes. Fundamentally, assessment techniques can identify a soldier's significant strengths and weaknesses. A plan to strengthen his weak skills can then be charted.

One of the most popular examples of assessment for developmental purposes is the Army's use of the Center for Creative Leadership in Greensboro, N.C. Since the early 1970s, the Army has sent senior officers to assessment sessions. Reports from the participants were encouraging. They identified areas that require attention and received recommendations on how to improve.

The Army War College, Carlisle Barracks, Pa., has a two-part assessment effort. In August of each year, the new student completes five questionnaires or written tests which measure mental abilities and skills. The advantages of this kind of assessment include minimal cost, a wide variety of formats, significant empirical bases, minimal time needed to administer and, for most, no ties to a specific assessment environment.

The disadvantages are equally significant: some are open to theoretical dispute, their use and interpretation are subject to misuse by untrained users, some are generally less accurate than most assessment center results and several are required for a valid picture.

The interpretation and future application for the person assessed are then explained. A second part is offered as an elective. The self-assessment exercises pit the officer against a series of activities designed to measure performance at a senior staff level.

Until recently, the 4th Infantry Division (Mechanized) conducted a leadership assessment and development center as sessment for prospective company commanders. The assessment portion lasted two days. The assessment feedback helped the officer gauge his efforts to address critical, complex command skills.

The value of assessment centers is directly linked to the applicability of the information provided the assessee, who often leaves a feedback session confused. This confusion can be attributed to the assessor's failure to understand the assessment process or how best to translate the feedback into the assessee's language. This can be avoided if assessors are properly trained and are thoroughly conversant with the assessee's job environment.

The rest of the Army has adopted assessment techniques in a variety of formats. Most users employ written tests or questionnaires in conjunction with leadership training.

The objective of assessment is often misunderstood and the process is sometimes perceived either as a threat or a novelty. The threat can be real, however.

If someone uses information from an assessment for performance evaluation

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MAJ. ROBERT L. MAGINNIS is chief of the leadership instructional branch at the Infantry School, Ft. Benning, Ga. Commissioned from the U.S. Military Academy in 1973, he has served in three divisions in positions ranging from platoon leader to general staff.



Soldiers work together in the Infantry School's leader's reaction course at Ft. Benning, Ga.

job selection, the information's use
n be perceived as a threat. This is espe-
lly true if the assessee does not under-
nd or discounts it. If the perceived re-
lts are tainted, in much the same way
the Army's urinalysis testing results,
Army-wide perception of any future
sessment program could be jeopardized
iously. This problem is best resolved
clarifying the proper use of the assess-
nt information.

Assessment is also perceived as a nov-
y, a perception sometimes encouraged
consultants who promise that a dose
their product will lead to excellent re-
ts. The Army is too often plagued by
evealing explanation of the results of
instrument personally completed. The
lled consultant turns on the whistles
l lights, and the Army falls victim to
consultant's marketing prowess and its own lack of expertise in the area.

Assessment tests or surveys are typically used to identify information about one or more of the following: overall job satisfaction; alienation and commitment; personality; job involvement; work values, beliefs and needs; perceptions of the job, work role and organization climate; and leadership styles and perceptions of others. Most often, a questionnaire is needed to assist with leadership development programs. Selecting the right format requires study and patience.

If the Army is serious about selecting an effective means of assessment, it should first select several for comparison. Each should be analyzed using the following criteria: validity, reliability, objectivity, availability, cost, time, sophistication, complexity, theory base, behavioral orientation and observability. A study of these criteria should make the decision easier.

Assessment center techniques are an expensive alternative to written assessment surveys. Typically, this approach requires a significant needs analysis, training for quality evaluators and an institutional commitment. The center at Ft. Benning required three and a half days to assess 12 soldiers simultaneously.

Each assessee participated in seven exercises in which the trained assessors watched for the presence of critical leader skills. These exercises include role playing, mastery of assigned objectives and other situations in which the assessee's reactions can be observed to determine his ability to lead, communicate, cooperate, plan and make decisions.

These techniques are also used successfully by the largest civilian corporations. They contend that the return on their investment is significant.

Who should the Army assess? It is desirable to assess everyone; however, this would obviously be a prohibitively expensive undertaking. Assessment must be discriminating and cost-effective.

One approach might be to invest assessment resources based upon the complexity of anticipated demands on leaders. This approach takes into account the future battlefield environment and the requirements placed on the significant leaders on that battlefield. In all probability, Army leaders requiring assessment will include most leaders in the chain of command from squad leader to commanding general.

Army leaders should be assessed to ascertain their developmental needs for specific leader roles. This can be accomplished with a battery of written tests or a combination of exercises observed by trained assessors. The less expensive assessments (and usually the least powerful) would be employed for developmental purposes and the more expensive for selection purposes.

An alternative would be to use assessment centers for prospective battalion to



Soldiers cross a water obstacle on the leader's reaction course, designed to evaluate field leadership potential.

division commanders. Squad leaders to company commanders could be assessed using a less expensive battery of tests and surveys.

Where should the Army conduct assessments? The Army school system is best equipped to institutionalize developmental assessment methods. What better place to help the soldier identify weaknesses and provide the environment in which to build leadership skills?

Assessment for selection purposes should be conducted in the line units and at the Department of the Army level. Division commanders should be given the latitude to select the best qualified from an inventory of leaders. The Military Personnel Center should assess qualified leaders to determine where they can best serve the Army.

Before this or any assessment proposal is executed, it must be noted that assessment is neither a panacea nor should it become another skill qualification test (SQT).

Rather, assessment is a discriminator, a tool for assisting personnel managers in selecting leaders for specific roles, specialties, schools and so forth. Steps must be taken to preclude the abuse of this technology. The Army can begin by taking considerable care to preclude mixing assessment for professional development and assessment for selection.

Finally, the Army should execute an extensive education effort to dispel rumors about assessment and help all Army leaders focus on the benefits of a leadership assessment program.

The advantages of assessment are multifaceted. It will help the soldier understand where he needs to improve. It will demonstrate how he can best serve the Army while satisfying personal ambitions. It will also optimize combat leadership skills by molding and managing them efficiently, with the ultimate objective of ensuring that today's leaders are prepared fo tomorrow's battles.

The peacetime payoff is in conservin training resources by training the soldie only in those skills that are congruou with his required skill proficiencies. Thes advantages are subject to the scope of fu ture assessment programs.

The scope of these programs is depen dent on an understanding of their poten tial. The Army's assessment approac now parallels the approach it has take with the microcomputer—sporadic. Ju as the value of the microcomputer shou not be judged by the disjointed, unde used and often misunderstood applic tions now in the field, so, too, the valu of assessment should not be judged b the chaos that currently exists in unde standing and using it.

The Army must be serious about pr paring leaders for the AirLand Battl Assessment linked with sound doctrin will ensure that Army leaders have th complex skills necessary to win the Ai Land Battle.

Work Quietly

The canine mascot of the Honor Guard in the Eighth U.S. Army compound in Seoul, Korea, was named Herman-Nelson after the famed Army space heater.

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He was Col. Herman.

COL. L. W. CASSELL
U.S. Army, retired

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L T V : L O O K I N G A H E A D

The Little-Big School Off Buzzard's Point



By Col. Stanley L. Falk
U.S. Army Reserve, retired

At the confluence of the Anacostia and Potomac rivers in Washington, D.C., on a small finger of land adjoining Buzzard's Point, Ft. Leslie J. McNair is one of the oldest active military posts in the United States. In its nearly 200 years of existence, the site has housed a tiny fort, an arsenal, a federal penitentiary, a military hospital, an engineer school and the Army War College.

Enlarged by landfill and purchase to 89½ acres—just over three times its size in 1791—Ft. McNair, as it has been called since 1948, is now a pleasant, tree-lined, handsome enclave in the nation's capital. It resembles in many ways a small college campus. This appearance is hardly inappropriate, for today the post is the home of the National Defense University, the senior educational institution for future leaders of America's armed forces.

The National Defense University was established on 16 January, 1976, bringing together the National War College and the Industrial College of the Armed Forces, which were academic neighbors at Ft. McNair for 30 years. In 1981, the Armed Forces Staff College, in Norfolk, Va., also became part of the university.

The Department of Defense thus united in a single educational institution the experience and expertise of its three joint colleges: national strategy and international security affairs at the War College, industrial and economic mobilization and



Students learn from one another, as well as from a strong faculty, at the National Defense University, where officers from all services and key government civilians prepare for higher responsibilities in a collegial setting that stresses ethics and the skills of the generalist.

nagement at the Industrial College, d joint and combined operations at the aff College.

Further contributing to this academic ncentration has been the establishment thin the university of three important ucational centers. The Institute for Nanal Strategic Studies coordinates all iversity research activities. The Instie for Higher Defense Studies provides "Capstone" course for a limited num- of general and flag officers and senior foreign service officers, along with a separate International Fellows program for senior foreign officers.

The Department of Defense Computer Institute, now located at the Washington Navy Yard, offers professional education and support in information management. The university also has a broad extension program for the nonresident defense community, including correspondence courses, seminars and symposia.

The president of the National Defense University is a lieutenant general or vice-admiral, the vice-president, a senior Foreign Service officer. Lt. Gen. Richard D. Lawrence, U.S. Army, is the president. His vice-president is Ambassador L. Bruce Laingen, one of those held hostage in the American embassy in Tehran, Iran.

The commandants of the university's three colleges each wear two stars. Maj. Gen. Kenneth A. Jolemore, U.S. Army, heads the Armed Forces Staff College; Maj. Gen. Clyde D. Dean, U.S. Marine Corps, the Industrial College of the Armed Forces; and Maj. Gen. Perry M. Smith, U.S. Air Force, the National War College.

A university is commonly defined as a corporate institution for teaching, study and research in the higher branches of learning, consisting of a group of schools or colleges and empowered to grant degrees in special subject areas. Except for the authority to grant degrees, which it lacks, the National Defense University easily meets this definition. It is also, to cite another university attribute, clearly "devoted to the conservation, dissemination and advancement of learning."

Its mission, as assigned by the Joint Chiefs of Staff, is "to ensure excellence in professional military education and research in the essential elements of national security." Specifically, it prepares senior officers and career civilian officials for top command and policymaking positions and mid-career officers for joint and combined staff duty.

It offers programs for study and research in national and international security affairs, including mobilization and resource management and joint and combined operations. It also serves as a base of expertise in these areas, primarily for the Department of Defense, but also for the government as a whole.

Responsibility for directing this ambitious educational institution—with a total budget this year of $20.6 million—lies in the hands of the university's president, now Gen. Lawrence, who reports directly to the Joint Chiefs of Staff.

He has the job of administering and allocating resources within the university, overseeing and harmonizing the courses of study at the three colleges, and coordinating the professional development of students and faculty. Gen. Lawrence believes that each of the university's colleges and institutes must pursue its own mission while at the same time drawing on the strength and diversity offered by the university concept.

This diversity is best exemplified by the university's student body, which includes people with an assortment of professional skills, experience and points of view. Observing National War College and Industrial College students—those studying or doing research at Ft. McNair, where proximity and shared facilities promote the strongest interaction and communication—reveals impressive variety. While the Armed Forces Staff College is separated by distance and mission from the two schools in Washington, D.C. the McNair campus offers an excellent opportunity for collegial integration.

The nearly 400 students at the War and Industrial Colleges this year include officers from all of the services as well as civilian federal employees, who make up nearly a quarter of the total, from the Defense and State Departments and more than a dozen other government agencies.

Seventeen of the students are women. Included also are seven International Fellows from Brazil, Egypt, West Germany, Israel, Korea, Pakistan and Saudi Arabia. Army officers constitute approximately one third of the military students, while Army civilian employees account for about ten percent of the civilians.

Nearly three quarters of these students have graduate degrees in a variety of fields; an equal proportion have served overseas, many in advisory groups. The military officers, in the grades of lieutenant colonel or commander and colonel or captain, average 42 years in age. Most of them have served on departmental, joint or combined staffs, as well as on high-level staffs in their own service. Nearly half have held commands at the lieutenant colonel or commander level, or its equivalent. Perhaps a fourth of these students will eventually become generals, admirals or ambassadors.

Faculty members at the two colleges represent an equivalent mix. Military and civilian instructors display wide and varied backgrounds, and most hold graduate degrees. All Army officers now teaching at Ft. McNair have advanced degrees. Gen. Lawrence earned a Ph.D. in engineering at Ohio State University.

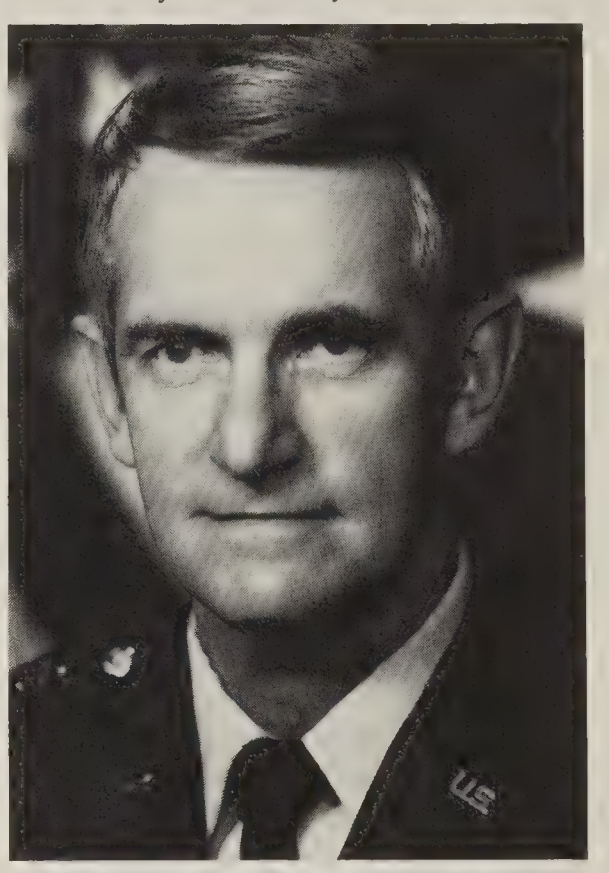
"The strength of this institution is in the collective experience of all," he tells students. "Listen to it. Be absorbed by it. Above all, contribute to it."

Students at the War and Industrial Colleges are thus expected to help furnish a part of each other's education and are given ample opportunity to do so. Both schools rely heavily on seminars, workshops and group discussions, where the flow of ideas and debate is energetic and free. Guest lecturers from government, business and academic institutions are also subjected to vigorous questioning. Joint research projects, exercises, simulations and domestic and international field trips further promote the exchange of thoughts and opinions.

The separate curricula at the ten-month courses of the two colleges are complementary and at times overlap. Both share a special emphasis this year on developing executive skills through increased focus on ethical imperatives in government service, organizational behavior, decision making and leadership.

Both also emphasize research into national and international security issues of immediate concern to the defense community.

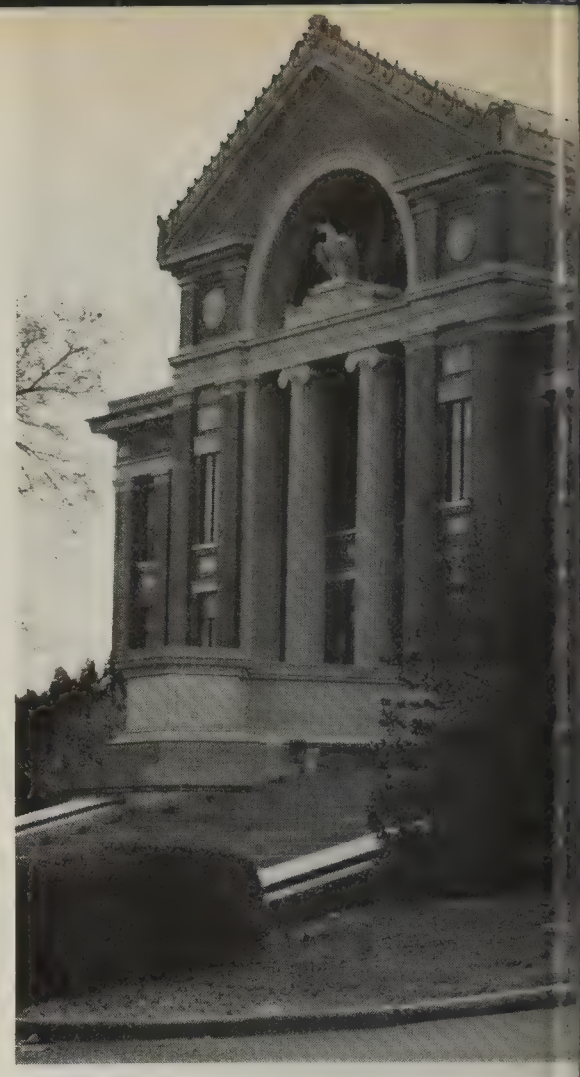
This joint emphasis on ethics and current defense issues grows directly out of Gen. Lawrence's own deeply held views. A strong believer in the importance of ethical and institutional values, he insists that the university play a significant role in developing individual and organizational character and teamwork within the military community.



Lt. Gen. Richard D. Lawrence, U.S. Army, National Defense University president

He is equally convinced of the need to tap the experience and expertise of university faculty, staff members and students to carry out functional research for leaders and policymakers in the national security establishment. The university research effort, says Gen. Lawrence, "has not yet reached its full potential."

Gen. Lawrence also believes firmly in the value of military history. He hopes to increase the role of history in the university curriculum. One possibility might be a course for the two McNair colleges, perhaps called "Joint Studies in the Operational Art," using historical case studies



of major joint or combined operations as a means of familiarizing students with senior operational command problems.

War and Industrial College students have several opportunities to share classrooms and lecture halls throughout the academic year. In August, at the beginning of the school year, the two schools conduct joint seminars and workshops on the role of behavioral factors, small group dynamics and decision making in executive skill development. Students also get a general overview of national security affairs, a practice continued throughout the year in joint lectures by senior officials.

Also during the year, a number of joint elective courses provide still further opportunity for students from the two colleges to work together. At the end of the year, the university conducts a joint computer-based, two-week strategy and resource exercise designed to use student skills and concepts developed during course study.

In general, however, the two schools follow different academic tracks. The National War College curriculum focuses on national security policy and strategy and the application of military power. It deals with such subjects as the art of war, the international security situation, the dynamics of national security policy development, defense policy and military strategy, and joint and combined operations.

The Industrial College of the Armed Forces is primarily concerned with resource management. It focuses on human and industrial mobilization, national secu

---

COL. STANLEY L. FALK, U.S. Army Reserve, retired, Ph.D., was formerly deputy chief historian for Southeast Asia at the U.S. Army Center of Military History and is the author of five books on World War II.



The university's facilities at Ft. McNair have the look of a small college campus: (left) *Roosevelt Hall is home of the National War College, and* (below) *Eisenhower Hall is the main building of the Industrial College of the Armed Forces; Normandy Hall* (bottom) *houses the Armed Forces Staff College, the NDU component located in Norfolk, Va.*



ty resources, systems cquisition and pro- urement, and man- gement systems in eneral. The college lso offers students ıe opportunity to articipate in a coop- ative master's degree rogram in public dministration with eorge Washington niversity. Only out 15 officers and civilians are now rolled in this program, however, since ıe majority of Industrial College stu- ents already hold advanced degrees.

With the support of the university's War Gaming and Simulation Center, both schools ndertake a number of exercises and simations throughout the year. The broadt of these, and the culminating effort of e National Defense University curricum, is the joint exercise known as Prunt Stride. This is a simulation involvg joint service strategy, force structurg, crisis management, deployment planng and a concluding war game.

Divided into 30 or so teams of about dozen people, the students develop straties and force structures with which to spond to an international crisis situan. They take military, political and onomic actions, manage the crisis, and ploy and utilize supporting forces. As e final part of the exercise, they play joint worldwide war game.

While students, staff members and faculty make good use of minicomputers and microcomputers, the university computer systems lack sufficient power to handle the various war-game programs. Such support must, therefore, come through contracts with time-sharing vendors for large mainframe computers.



Plans and efforts are under way, however, to expand the university's computer capability, to increase automation throughout the institution and eventually to introduce a system that will tie the entire university (including the Norfolk campus) together electronically.

An integral part of all this is the university's Department of Defense Computer Institute. A mile away at the Washington Navy Yard, it provides computer ed-

ucation to university students and others throughout the Department of Defense.

Like all modern universities, the National Defense University places heavy emphasis on innovative research. But, as Gen. Lawrence has stressed, instructors also believe that this research should focus on critical national security issues and be of practical assistance to the defense community.

All university research activities are linked together in the Institute for National Strategic Studies. The institute not only coordinates student research and attempts to direct it toward meeting the needs of defense policymakers, but it also acts as a research organization and think tank for the national security establishment as a whole.

Its Strategic Concepts Development Center and Mobilization Concepts Development Center, staffed by military and civilian fellows, prepare studies, policy reviews, and conceptual initiatives on strategy, operations, mobilization, and industrial preparedness for the secretary of defense and the Joint Chiefs.

The institute also directs the National Defense University Press, which publishes books, research studies, conference proceedings and other papers. Its annual output is greater than that of more than half the university presses in the country. Its publications are used widely in civilian colleges as well as at the service academies and schools. Its prestige and reputation are growing rapidly.

The National Defense University library is the basis for much of the research done at Ft. McNair. It includes about a quarter of a million bound volumes, pamphlets, and classified and unclassifed government documents. Among the most interesting items are the special collections: personal papers, rare books, photographs, maps, prints and student papers. Notable are the personal papers of Gens. Paul D. Adams, Andrew J. Goodpaster, Lyman L. Lemnitzer and Maxwell D. Taylor.

Taken as a whole, the course of studies at the Ft. McNair campus may seem too broad or too complex for any student to handle in a single ten-month period. Indeed, it is sometimes argued that the curriculum is "a mile wide and an inch deep," with no opportunity for specialization or in-depth study.

Gen. Lawrence disputes this view. He says that "depth is a function of how deep you wish to dig," and students still have ample time to develop specific interests and pursue them in detail. In any event, he insists that the National Defense University seeks to create generalists rather than specialists. The courses at Ft. McNair attempt to lay a broad foundation for further study and greater understanding of issues and relationships that graduates will face in subsequent assignments.

"The future world," says Gen. Lawrence, "will be one of ambiguity and complexity." Students must be prepared to meet and overcome vague and changing situations in which facts and solutions are rarely clear.

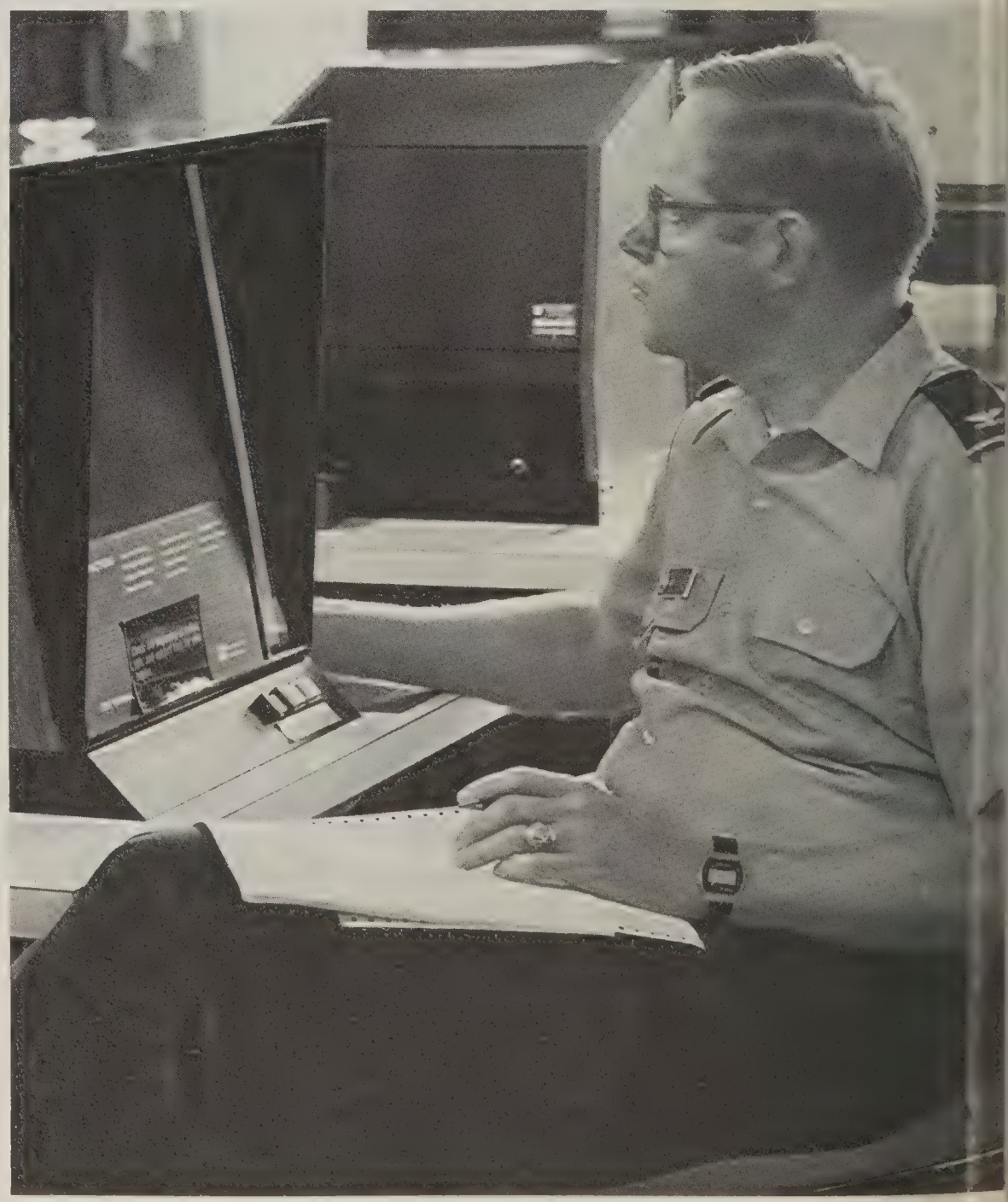
So there are no "school solutions" to problems at the National Defense University. The emphasis is rather on accepting differing points of view, formulating reasonable options, and developing creative and persuasive leadership.

Some critical observers of the National Defense University are concerned that emphasizing executive skills and busines management may produce routine mar agers rather than bold leaders, with st fling effects on the military establishmen Not so, say those at Ft. McNair.

Leadership and management are inev tably intertwined, they argue, and senio defense officials must combine both qua ities. The university's emphasis on ind vidual and institutional values stresse responsible management and innovativ leadership, rather than the less positiv aspects of management so often decrie by critics.

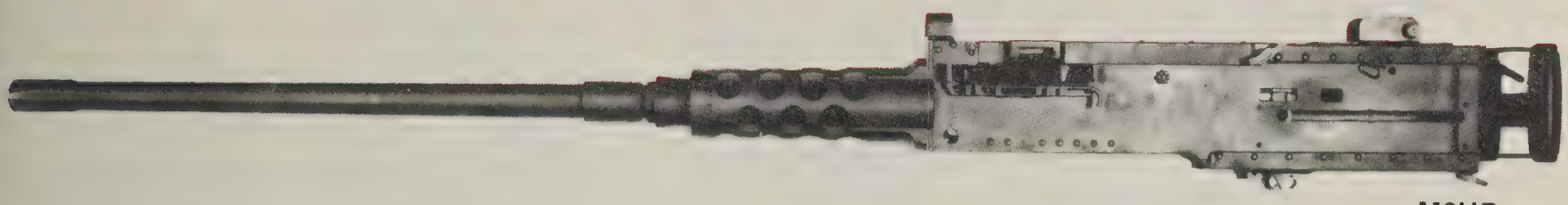
Finally, most of the students at Ft. Mc Nair have already had ample experienc in military operations and commanc Combining this background with wha they are now learning is the only way t prepare these officers for the kinds c problems they will face in the senior com mand and policy positions awaiting them

The third college in the National De fense University, the Armed Forces Staf College at Norfolk, is separated by mor than 200 miles from the rest of the uni versity. It also has a considerably differ

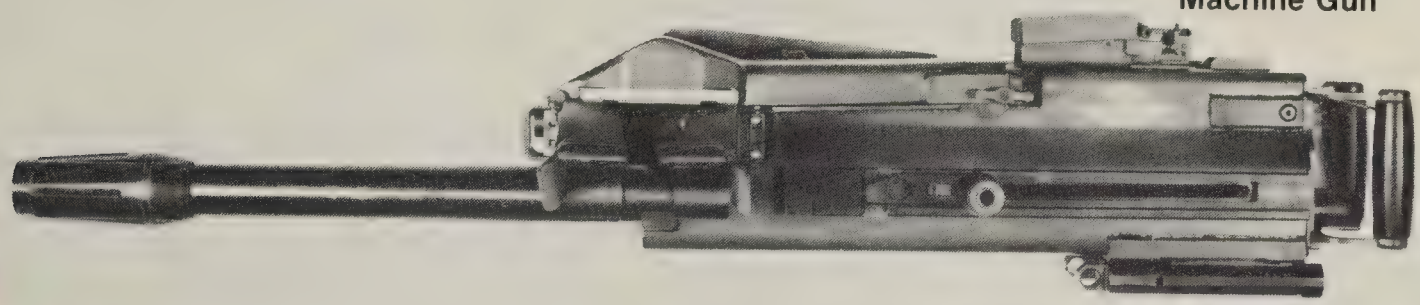


An Army student consults microfilmed materials in the university's library.

Firepower on demand

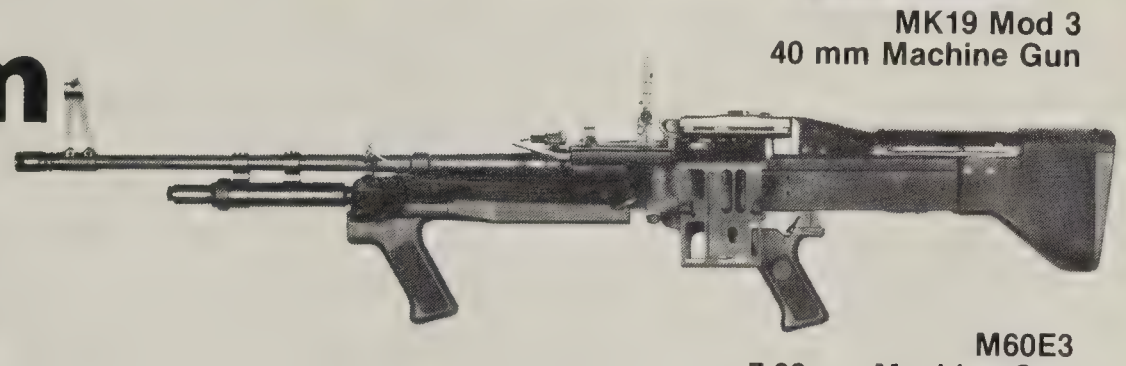


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GARRETT





War-gaming at the Armed Forces Staff College, where the curriculum is liberally supported by computer-based simulations.

t educational mission. Its students are id-career rather than senior officers and, Gen. Lawrence points out, it is proply an "intermediate" school as contrast- to the senior-level colleges in Washgton.

It shares with the War and Industrial olleges an emphasis on executive devel-ment and ethical and institutional vals, and National Defense University facy provide support and guidance in ese areas. Otherwise, there are obvious ferences between the curriculum at rfolk and that offered at Ft. McNair.

The Staff College includes two classes a year of approximately 280 students each—the joint and mbined staff officer course runs 21 eks—as well as shorter courses and entations. Its students are primarily icers, almost all in the grade of major lieutenant commander, including some ied officers. There are also a small mber of federal civilian employees.

The curriculum at the Staff College foses on joint and combined operations nning, but also includes such areas as ategy, defense management and comnication skills. Seminars and guest tures are supported by computer-based simulations and other instructional activities. An impressive library of more than 100,000 published materials and documents offers ample opportunity for research.

At Ft. McNair, which the National Defense University shares with the Inter-American Defense College and the Military District of Washington, the War College and Industrial College buildings are impressive structures, dominating the southern half of the post. Yet successive university presidents, supported by the Joint Chiefs of Staff, the Department of Defense and by congressional encouragement, have pointed to overcrowded classrooms and compressed study and research areas, and have urged construction of additional facilities.

Accordingly, plans are under way to build a 200,000-square-foot academic/library center, which would house university administration and support functions, the university library and the Department of Defense Computer Institute. This would free sufficient space within the War and Industrial Colleges to alleviate crowded conditions and improve the quality of academic life at Ft. McNair.

The new building is projected for a 10½-acre site immediately east of Ft. McNair which now houses two decrepit World War II "temporary" structures. Construction could begin as early as next year, assuming resolution of problems holding up acquisition of the desired land. Gen. Lawrence is hopeful that the problems will be resolved and that demolition of the old buildings can soon begin.

Nearly 2,500 years ago, Socrates, the Greek philosopher and sometime soldier, pointed out the vital importance of advanced military education. War is an art, he said, that requires study and practice far beyond the basic skills of the drill field. And "the higher the duties" of the soldier, said Socrates, "the more time and skill and art and application will be needed by him."

The education offered at the National Defense University may or may not match Socrates's concept of senior military education, but the course of studies includes the subjects he mentioned: planning and preparing for war, leadership, effective management, and an understanding of the philosophy and spirit necessary for high command. In Socrates's words: "No tools will make a man a skilled workman or a master of defense, nor be of any use to him who has not learned to handle them."

Innovation

Give new quality and strength to America's airlift as the new C-5B takes shape in Georgia.



Lockheed-Georgia
Giving shape to imagination.

Marietta— April 1985

The fuselage of the first of the USAF's new C-5B aircraft has passed its pressure testing with flying colors and has donned its battle colors. Shown on its way to final assembly, C-5B #1 now is receiving at a rapid rate its wings, engines, tail section and other major components.

When this historic C-5B rolls out



this summer, it will be an aircraft virtually ready for check flights and delivery. It also will set new standards of quality and reliability while still meeting budget and schedule targets.

A modern, improved airlifter, the C-5B is a superior example of innovation in aircraft design, materials, and manufacturing. It has *improved* avionics, engines with increased reliability, and new alloys with greater resistance to fatigue and corrosion.

Among the advanced techniques used in C-5B manufacturing is the new L&F Stretch Forming Press for fabricating large skins and heavy aluminum extrusions such as the huge C-5B wing root caps much more quickly and efficiently.

The fixed-price C-5B program will increase America's outsize cargo capacity by 65%. Airlift, vital to deterrence, will be greatly enhanced, increasing the nation's ability to move troops and all of their equipment anyplace in the world they are needed.

As the first C-5B approaches rollout, the men and women at Lockheed-Georgia, along with the thousands of employees at Lockheed's C-5B suppliers in 45 other states, take pride in their contributions to the quality and success of the C-5B program.

The emphasis on small-unit cohesion in current Army policy and doctrine owes much to the pioneering work of an obscure French colonel who was one of the first to think objectively about the behavior of men in battle, but whose writings lay unexamined for 30 years after his death in combat.



By Maj. Mitchell M. Zais

The Army's new AirLand Battle doctrine draws on the precepts of five military theorists: Karl von Clausewitz, B. H. Liddell Hart, Hermann Maurice comte de Saxe, Sun-tzu and Charles Ardant du Picq. Most students of military art are familiar with the first four, but who is Ardant du Picq?

Charles J. J. J. Ardant du Picq was an obscure French colonel, killed in 1870 leading his regiment in combat during the Franco–Prussian War. He was also a brilliant thinker who added much to the evolution and development of military theory and doctrine at the small-unit level. More than ever, this forgotten theorist deserves to be read today.

Ardant du Picq is most noteworthy for his recognition of the effects of "moral force" on battle—a summation of *élan*, *esprit de corps*, courage and unit cohesion. Nearly a century before the rest of the world began to consider these relationships, he foresaw the effect of increased technology on battlefield tactics and small-unit command and control.

Details of Ardant du Picq's personal



Ardant du Picq: Unsung Giant of Military Theory



life are obscure. He was born Charles Jean Jacques Joseph Ardant du Picq in Périgueux, France, in 1821. Upon graduation from the French Military Academy at Saint-Cyr, he was posted to an infantry regiment, where he remained for nine years. While fighting in the Crimean War, he endured a grueling winter siege and participated in the storming of the central bastion of Sevastopol. There he was captured and spent three months as a prisoner of war in Russia.

The 15 years following his release included assignments in infantry battalions and regiments with campaigns in Syria and North Africa. During the opening days of the Franco-Prussian War, in 1870, he was mortally wounded while commanding the 10th Infantry of the Line near Metz, France.

Little of Ardant du Picq's writing was published during his lifetime. Thirty-two years later, in 1903, his surviving works were collected and published in France as *Battle Studies: Ancient and Modern Battle*. It was reported that during World War I, after Tolstoy's *War and Peace*, Ardant du Picq's *Battle Studies* was the most widely read book in the French trenches. However, not until 1921 was it translated into English and published in the United States.

Ardant du Picq has been variously described as "an obscure French colonel," and as "one of the most clear-sighted philosophers whom sovereign genius had ever created." Professor Theodore Ropp, in *War in the Modern World*, states that *Battle Studies* is "one of the most original . . . works of the century."

One thing is clear, Ardant du Picq's observations are those of a man of action whose thoughts sprang from a deep understanding of his experiences in battle.

Ardant du Picq's methods for studying war were revolutionary and involved the integration of three sources of knowledge. First, he relied on his extensive experience to provide the foundation on which to build his subsequent research and study. Second, he read the military writings of the Greeks and Romans who he felt were more honest concerning the effects of fear on human conduct during battle. These ancients tended to see com-

bat more as a clash of men and wills, unlike military writers of Ardant du Picq's time, who generally viewed battle as an exercise in maneuver, a gigantic game of chess.

He also felt that ancient battle was simpler and thus the eternal truths about men in battle were easier to identify during this period. Finally, Ardant du Picq employed the novel and controversial technique of distributing questionnaires to his fellow officers to determine exactly what had transpired during a given battle. Questionnaires were valuable, he said, because:

> The smallest detail, taken from an actual incident in war, is more instructive for me, a soldier, than all the [theory] in the world. [Theorists] . . . never show me what I wish to know—a battalion, a company, a squad—in action. . . . From a series of true accounts there should emanate an ensemble of characteristic details which in themselves are very apt to show in a striking, irrefutable way what was . . . taking place at such and such a moment of an action in war. . . . They are matters infinitely more instructive to us as soldiers than all the discussions imaginable on the plans and general conduct of the campaigns of the greatest captains. . . . From colonel to private we are soldiers, not generals, and it is therefore our trade that we desire to know.

Although the number of officers who were conscientious enough to aid in his research or who were willing to admit their fallibility on the field of battle is a matter of speculation, the very act of preparing a questionnaire was a breakthrough: it was an attempt to use a rational, scientific method to gain knowledge about combat which could then serve as a basis for developing tactical doctrine. From these three sources, Ardant du Picq was able to determine how the humanness and psychological characteristics of the combatants influenced battle.

A century later, another soldier, S. L. A. Marshall, gained fame and international recognition by employing similar research techniques. While he received the recognition, it was Ardant du Picq who actually pioneered the study of war at the individual and small-unit level. It is probably more than coincidence that many of Brig. Gen. Marshall's conclusions, based on his after-combat interviews, are so similar to those of Ardant du Picq.

While Gen. Marshall worked with the significant resources of the Army's Office of the Chief of Military History at his disposal, Ardant du Picq worked in his spare time with no backing and no support from his superiors. S. L. A. Marshall rose to the rank of brigadier general and secured a significant place in military history. Ardant du Picq died in battle, unknown and unhonored.

It is the mind that wins battles, that will always win them, that always has won them throughout the world's history.

Ardant du Picq was unique among military theorists. Unlike previous military thinkers, he did not address the relationships between the army and the state, or between military and political ends. Furthermore, he did not examine the interactions between society and warfare or how nations organized for war. And he did not analyze grand strategy or the operational art. These are all legitimate and necessary aspects of study, he said, but they are the province of the general, the statesman, the ruler—they are not the province of the soldier.

For the soldier, the proper level of study is battle at the lowest level. While war may be politics by other means, combat is not an extension of policy. Combat is a contest of arms and will between tired and terrified men. Therefore, the proper subject of study for the soldier is the study of men in battle: how they think, how they act and how best to increase their fighting ability. He believed and quoted Marshal de Saxe's dictum: "The human heart is . . . the starting point in all matters pertaining to war."

His studies of over a century ago are relevant today because they convey the timelessness and constants of battle from a soldier's perspective:

> Battle is the final object of armies and man is the fundamental instrument in battle. Nothing can be wisely prescribed in an army—its personnel, organization, discipline and tactics . . . without exact knowledge of the fundamental instrument, man, and his state of mind, his morale, at the instant of combat.

He recognized that the starting plac for the analysis of all things military i the individual soldier and his mental pro cesses at the time of battle. This recogni tion of the role of the psychological as pects of battle pervades his writings:

> It is the mind that wins battles, that will always win them, that always has won them throughout the world's history. The spirituality, the moral quality of war, has not changed. . . . Mechanics, modern arms, all the artillery invented by man and his science will not make an end of this thing . . . called the human soul.

This understanding of the role of min in battle led Ardant du Picq to the reali zation that the soldier in garrison and o training maneuvers is not the same as th soldier in battle. While in training h may be "calm, settled, unfatigued, atten tive [and] obedient . . . ," on the battle field the normal soldier, from privat to general, is "nervous, easily swayed moved, troubled, distraught, excited, rest less [and] not . . . under self-control."

The danger, he said, is to expect peace time training responses from soldiers i combat. Persisting in the illusion of th combat soldier's nature and failure t take into account the changes he under goes in battle can lead to military disas ter, he warned.

To illustrate the great differences be tween men in peace and men in battle as well as the role of "morale," Ardan du Picq wrote the following vignette:

> When in complete security, after dinner, in full physical and moral contentment, men consider war and battle, they are animated by a noble ardor that has nothing in common with reality. . . . But oblige them to march for days and weeks to arrive at the battleground, and on the day of battle oblige them to wait minutes, hours, to deliver it. If they were honest they would testify how much the physical fatigue and mental anguish that precede action have lowered their morale, how much less eager to fight they are than a month before, when they arose from the table in a generous mood.

One of the most persistent themes i the writings of Ardant du Picq is the per vasiveness, power and overwhelming ef fect of fear on the battlefield. Fear an courage, their impact on the outcomes c combat, methods of countering the debi itating effects of fear, and the relation ship between fear and tactics constitut principal components of his thought.

In order to understand the impact c fear and courage, it is first necessary t

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MAJ. MITCHELL M. ZAIS served with the 82nd and 101st Airborne divisions in Vietnam, and as an infantry battalion executive officer and S3 in Korea. A former assistant professor at the U.S. Military Academy, he is now in the advanced military studies program at the Command and General Staff College, Ft. Leavenworth, Kan.

understand the character and nature of he soldier. To Ardant du Picq the soldier is neither an "impassive pawn" nor an "abstract unit." He is "flesh and blood . . body and soul. And . . . the soul . . cannot dominate the body to the point where there will not be a revolt of the flesh . . . in the face of destruction." He recognized that fear would affect all aspects of combat.

Ardant du Picq also understood that maxims on the virtues of bravery, exhortations to courage and even Draconian treatment of those who did not withstand the stress of battle were inadequate to offset the effects of fear. He knew that platitudes and punishment would not make men brave:

> Absolute bravery . . . is not natural in man. . . . It is infinitely rare, because in the face of danger the animal sense of self-preservation always gains the upper hand. . . . Man has a horror of death. . . . There always comes a time when natural horror gets an upper hand . . . and the fighter flees. . . . The instinct of self-preservation is so powerful that he does not feel disgraced in obeying it.

By this, Ardant du Picq does not mean that there are no brave men. He had witnessed courage and he himself had exhibited it. He stated:

> I do not deny the glorious examples where discipline and devotion have elevated man above himself. But if these examples are glorious, it is because they are rare; if they are admired, it is because they are considered exceptions. . . . Are there so few really brave men among so many soldiers? Alas, yes! Gideon was lucky to find three hundred in thirty thousand.

He also appreciated the fact that men are not consistent in their behavior and that "bravery often does not at all exclude cowardice, horrible devices to secure personal safety [and] infamous conduct. . . ." These sentiments were, of course, in opposition to prevailing attitudes. The politic assertion would have been the opposite, that every Frenchman is a hero by birth, ready to spill his blood and sacrifice his life in defense of his nation. The wisdom of Ardant du Picq was in recognizing this chauvinistic propaganda for exactly what it was.

Ardant du Picq also recognized how fear reduces combat power. Observing soldiers halting and hiding during movement to battle, Ardant du Picq wrote:

> Nothing is easier than dropping out through inertia; nothing more common. This thing happens to every body of troops [moving] forward, under fire, in whatever formation it may be. The number of men falling out in this way, giving up at the least opportunity, is greater as formations are less fixed and the surveillance of officers and comrades more difficult. . . . Today, numbers are considered the essential. . . . We assume that all the personnel present with an army, with a division, with a regiment on the day of battle, fight. Right there is the error. . . . At a distance, numbers of troops . . . may be impressive, but close up they are reduced to 50 to 25 percent who really fight.



The Bettmann Archive

French Zouaves storm the Russian Malakoff position: Ardant du Picq was captured in this assault, which concluded the siege of Sevastopol during the Crimean War.

Nearly a century later, following World War II, Gen. Marshall reported similar figures. He found that in the best combat units, only 25 percent of the individual soldiers actually fought, where fighting was defined simply as firing one's weapon. This figure, received with dismay and disbelief, supported what Ardant du Picq had observed earlier.

Closely related to the loss of control of soldiers through their dropping out is the relationship between the lethality of the battlefield and the requirements for dispersion. Fifty years before the slaughter of World War I was to prove him correct, Ardant du Picq foresaw changes in battle wrought by improved rates of fire and increased ranges of new weapons. He saw how these new weapons would force greater dispersion which would increase the soldier's perceptions of isolation and helplessness.

Dispersion would also reduce the control officers and sergeants could exercise over their soldiers. This increasing battlefield dispersion was a tremendous change from the massed formations of Napoleonic times; a change of such magnitude and significance that its impact on both tac-

tics and the psychology of battle would not be fully appreciated by the vast majority of military thinkers until after World War I when the lessons of massive slaughter were ultimately assimilated.

However, 70 years before this tragic loss made it clear that increasing firepower dictates increased dispersion, Ardant du Picq recognized this relationship. When soldiers are no longer in sight of their leaders they no longer have the threat of punishment to impel them forward in the face of the enemy. He observed that combat dropouts are not only the result of fear but are facilitated by advances in weapons technology which make dispersion imperative.

Ardant du Picq was also the first military theorist to postulate the relationship between technology, the intensity of battle and stress casualties:

> Everything leads to the belief that battle with present arms will be, in the same space of time, more deadly than with ancient ones. The trajectory of the projectile reaching further, the rapidity of fire being four times as great, more men will be put out of commission in less time. While the arm becomes more deadly, man does not change, his morale remains capable of certain efforts and the demands upon it become stronger. Man is capable of but a given quantity of fear. Today one must swallow in five minutes the dose that one took in an hour in [earlier] days. . . . Morale is overtaxed; it reaches more rapidly the maximum of tension which throws the soldier to the front or rear.

In other words, modern weapons increase the danger and more rapidly exhaust the physical courage of the combat soldier. This concept, later recognized by military psychologists, suggests that man can endure only so much fear before breaking. It was repeated a century later in a work by John Keegan, *The Face of Battle*, which examined many of Ardant du Picq's themes. Mr. Keegan, like Ardant du Picq, focused on the motivational and psychological aspects of the combatants.

A wise organization ensures that the personnel of combat groups change as little as possible, so that comrades in peacetime maneuvers shall be comrades in war.

By comparing Agincourt (1415), Waterloo (1815) and the Somme (1916), Mr. Keegan also concluded that battlefields are becoming more and more deadly, that this increases the level of fear of the participants, and that the amount of fear an individual soldier can tolerate is limited. In author Keegan's words, "[increased intensity] makes the fitness of modern man to sustain the stress of battle increasingly doubtful."

Recent research involving the determinants of stress casualties in battle support the conclusions of Ardant du Picq and, later, John Keegan. Specifically, it has been found that stress casualties are a function of both the duration and intensity of the battle. But what is the ultimate consequence? "The power of arms increases, man and his weaknesses remain the same."

Was Ardant du Picq predicting a future battlefield where, because of increased technology, intensity and lethality, men are incapacitated by fear, unable to think or act, dropping out at the first opportunity and the slightest pretext? Is there no remedy for the loss of control that is the consequence of increased dispersion? The answer to this dilemma, he found, was cohesion.

One aspect of the military profession which makes it unique, according to Ardant du Picq, is its goal of developing behavior in combatants that is contrary to human nature; that is, to overcome fear and the natural instinct to preserve life and limb.

The way this is accomplished, according to Ardant du Picq, is through cohesion. Cohesion is important, not because it makes soldiers and leaders feel good about one another, but because it is a prerequisite to fighting spirit.

He maintained that only cohesive units will continue to advance on the enemy. The sense of duty to one's old and trusted comrades can help overcome the natural tendency to fall back from danger and avoid combat. In short, cohesion imparts to the soldier a desire to support his comrades in danger and can partially compensate for the effects of fear. Cohesion can also serve as an antidote to the effects of dispersion:

> Since the invention of firearms, the musket, rifle, cannon, the distance of mutual aid and support are increased between the various arms. The more men think themselves isolated, the more need they have of high morale. We are brought by dispersion to the need of a cohesion greater than ever before.

Cohesion can serve as a substitute for direct supervision and observation by the soldier's leaders. It is a replacement for the threat of any punishment that might result from his dereliction of duty since "a force engaged is a force out of the hand of its commander." This same

While the arm becomes more deadly, man does not change, his morale remains capable of certain efforts and the demands upon it become stronger.

phenomenon was later described by General Marshall.

Finally, cohesion increases the value the soldier places on his peer's opinion of him. It makes him concerned that they might judge him unworthy of their respect. This is a powerful combat motivator. While the opinions of strangers may be unimportant, the good will of one's comrades is vital.

Foreshadowing the work of a large number of social psychologists and sociologists who investigated the effects of "primary groups" and "bonding" during and after World War II, Ardant du Picq wrote:

> What makes a soldier capable of obedience and direction in action . . . includes . . . confidence in his comrades and fear of their reproaches and retaliation if he abandons them in danger; his desire to go where others do without trembling more than they. . . . Self-esteem is unquestionably one of the most powerful motives which moves our men. They do not wish to pass for cowards in the eyes of their comrades. . . . We are all proud people, but people who would skulk [in battle] if we were not seen, and who consequently must always be seen, and act in the presence of our comrades and the officers who supervise us.

His insight into human nature was remarkable. Before anyone else had described the effect, he perceived how friendships in small groups of men make it more difficult to quit the field. Ardant du Picq also recognized the relationship between

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French (foreground) and Prussian infantry contest a village near Bapaume in Picardy, January 1871, during the Franco–Prussian War. Col. Ardant du Picq had been killed at the head of his regiment, the 10th Line, near Metz the previous autumn.

it cohesion and stress casualties.
He saw that, "in troops without co-sion . . . numbers enter the hospitals thout any other complaint than the k of morale, which very quickly be-nes a disease. A Draconian discipline longer exists; cohesion alone can re-ce it."

This is one of the earliest examples of the identification of battle stress casualties as a legit-ate and usually temporary condition, something very different from simple vardice. It also is further testimony to dant du Picq's farsightedness and as-e observation of the human condition battle. Ardant du Picq was able to dis-guish between cowardice and battle ss casualties some 50 years before the lers of European armies.
He also identified the primary sources unit cohesion as stability in units and red experiences and hardships:

> . . . wise organization ensures that the personnel of combat groups change as little as possible, so that comrades in peacetime maneuvers shall be comrades in war. From living together and obeying the same chiefs . . . from sharing fatigue and rest, from cooperation among men who understand each other in the execution of war-like movements, may be bred brotherhood, professional knowledge, sentiment, above all unity. The duty of obedience . . . and the impossibility of escaping from it, would naturally follow.

The more men think themselves isolated, the more need they have of high morale. We are brought by dispersion to the need of a cohesion greater than ever before.

Ardant du Picq realized that, because morale, fear and cohesion had a tremendous impact on man in battle, these factors should also be taken into account in the development of tactical doctrine. In so doing, he recognized the difference between tactical doctrine as theory and the execution of that doctrine in the heat of battle.

This led him to a revolutionary definition of tactics. "Tactics," he said, "is an art based on the knowledge of how to make men fight with their maximum energy against fear. . . ."

In other words, if tactics are based on false assumptions concerning the behavior of men in battle, then these tactics are doomed to fail. By way of illustration of this principle, Ardant du Picq pointed out that:

> . . . of nations apt in war, the strongest have been those who, not only best have understood the general conduct of war, but have taken human weakness into greatest account and have taken the best guarantees against it. . . . The Roman, a politician above all . . . had no illusions. He took into account human weakness and discovered the legion.

The goal of tactics, he said, is to build teamwork to counteract the effects of fear. It is to "prescribe beforehand proper means of organization and action to give unanimity to effort . . . in spite of the innate weakness of the combatants." According to Ardant du Picq, this con-

cept of tactics, based on knowledge of the nature of man, made possible the Roman empire:

> The Greeks were an intellectual civilization, superior to the Romans, consequently their tactics ought to have been far more rational. But such was not the case. Greek tactics proceeded from mathematical reasoning; Roman tactics from a profound knowledge of man's heart. Naturally, the Greeks did not neglect morale nor the Romans mechanics, but their primary considerations were diverse.

Mechanical analysis as a method for the development of tactics is inadequate by itself. It must incorporate knowledge of human psychology because:

> [In battle] very few reason or understand reason, very few are cool. . . . It follows that we above all need a method of combat . . . based on the fact that we are not passively obedient . . . but very nervous and restless. . . . If you only use combat methods that require leaders without fear, of high intelligence, full of good sense, of esprit, you will always make mistakes. . . . Note the army organizations and tactical formations on paper are always determined from the mechanical point of view, neglecting the essential coefficient, that of morale. They are almost always wrong.

Ardant du Picq would also have been a strong supporter of the theoretical concepts underlying AirLand Battle doctrine. For example, he advocated attacking deep behind the enemy's forward lines because of the effect of this maneuver on the enemy's will to fight.

He believed that units obtained moral supremacy by outmaneuvering the enemy, by surprising him, by doing the unexpected, by advancing when the enemy felt he had the advantage, by disrupting his plans. Moral supremacy, he felt, more than physical superiority of numbers, produced victory.

With equal or even inferior power of destruction, he will win who by his formations and maneuvers can continually threaten his adversary with a new phase of . . . action.

These concepts reflect the very essence of the new *Field Manual 100-5, Operations.* In fact, the following quotation from *Battle Studies* sounds like nothing less than the embodiment of the four principles of the current AirLand Battle doctrine—agility, initiative, depth and synchronization:

> With equal or even inferior power of destruction, he will win who by his formations and maneuvers can continually threaten his adversary with a new phase of . . . action. . . . Even by advancing you affect the morale of the enemy. . . . Your object is to dominate him and make him retreat. . . . It is certain that everything that diminishes the enemy's morale adds to your resolution in advancing. . . . Make the enemy believe that support is lacking; isolate; cut off, flank, turn, in a thousand ways make his men believe themselves isolated. Isolate in a like manner his squadrons, battalions, brigades and divisions; and victory is yours.

Many initiatives in the Army today reflect the concepts put forth by Ardant du Picq. AirLand Battle doctrine takes cognizance of the importance of leadership and morale forces in battle and recognizes that the psychological state of soldiers significantly affects their fighting abilities. Many current Army personnel policies have been designed to enhance these morale and psychological factors.

The most notable programs are COHORT (cohesion, operational readiness and training), the new manning system and the regimental affiliation system. These programs have as their primary goal the building of cohesion and the strengthening of the interpersonal bonds at small-unit level to increase combat effectiveness.

It is fitting that Ardant du Picq's words and ideas be incorporated into programs of professional development throughout the Army. If so, the Army and its members will be the richer and the name Charles Ardant du Picq will take its rightful place among the ranks of the great military thinkers.

Rocking the Boat

Every World War II veteran who was shipped overseas remembers how troopships were loaded to the gunnels and then some. When troops were allowed on deck during daylight hours in good weather, the limited deck space was crowded by fatigue-clad soldiers in all postures. These were the circumstances on board the converted old tramp steamer *Chantilly* when my company, the 893rd Signal Co. (Depot, Aviation), was en route to Bombay, India, in February–March 1944.

The *Chantilly* had been captured when the Allies invaded North Africa and converted into a troop carrier with a minimum of structural change. It had a narrow beam in proportion to its length, so it rolled easily.

Having sailed through the Mediterranean Sea, Suez Canal and Red Sea during the month of February, we had stopped in the Port of Aden, at the southern tip of Saudi Arabia. We spent five days there taking on supplies, but had no shore leave.

One hot afternoon during those five days, I sat on the narrow stern deck. The water was as smooth as glass, so it was with surprise that I sensed the ship was leaning to port, and looked at the stern rail. It had a definite strong tilt to port, so I stepped over to the port rail to look down the length of the ship.

Forward, by the bow, I saw a small sailboat sailing alongside the *Chantilly*, toward the stern. A red-headed girl wearing a white bathing suit was at the helm.

The port tilt of the ship increased, as more men crowded whatever vantage points they could find, including portholes.

Reaching the stern of the ship, the girl tacked the little boat around it and sailed down the starboard side toward the bow. Suddenly the *Chantilly* heaved over from port to starboard, the rail of the starboard deck hanging out over the water.

The PA came on, the voice almost frantic: "Now hear this! Now hear this! Right the ship! Right the ship!" As the little sailboat slid past the bow toward the distant beach, the old *Chantilly* settled back onto its even keel.

I have often wondered how the U.S. Army would have explained the capsizing of a crowded troopship in the smooth waters of the port of Aden.

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GENERAL DYNAMICS

This experiment in decentralized training management didn't turn out so well, but it wasn't for lack of imagination or the 'can-do' spirit.

Assault Down No-Name Mountain



By Col. William R. Cooney
U.S. Army Reserve, retired

An excellent article on the 10th Mountain Division in the February 1984 issue of ARMY brought to mind one of the more spectacular exploits of a one-time fellow officer, then-Maj., now Col. Richard W. Marshall, U.S. Army Reserve, while commanding a reserve components special forces unit in Pennsylvania in the early 1970s.

Having served a voluntary tour of active duty in Vietnam, Maj. Marshall had definite opinions on the importance of training. He also had the initiative to act in the spirit of the concept of decentralized training then in vogue (which actually meant that training decisions could be made at lower levels as long as the were right).

While the unit's normal training w both necessary and successful as well challenging fun—boating on the Susqu hanna River, rock climbing in the A palachians, air assaults hither and yon Maj. Marshall identified one serious fla While the unit was destined for deplo ment to northern climes, there were provisions in its training schedule f teaching the men to ski.

No sooner was the problem identifi than a solution came to mind. A visit a local ski slope arranged for an appr priate training area and the rental of t



cessary training aids. A request for ecial funding for the training bumped way up the chain of command and is returned approved. A drill date was ected and the training schedule adjust- To Maj. Marshall, it seemed a bit un- tling for so desirable a training activ- to be so readily okayed, but planning nt ahead nonetheless.

On the chosen day, the troops arrived the ski area primed for another train- success. Fitted with rented equipment, ly outfitted with gear, packs and weap- s, the team assembled at the foot of mountain. The assigned unit instruc- s, both of whom had skied before, briefly explained the procedures for turning and stopping, held a practical exercise on each technique, then led the men up the mountain; no chair lift was needed for these young, athletic, jump-qualified, Ranger-trained troopers.

Finally assembled at the top of the slope, the unit was given a short break and refresher training in the previous instruction and was then arranged in line on the crest. Maj. Marshall gave the command to advance, and his well-disciplined men pushed off together—to disaster!

Picture 20-odd green-clad troopers plummeting downhill totally out of control. Too athletic to fall (and too proud), they plunged toward eternity shouting (perhaps screaming) to civilian skiers to get out of their paths. With the weight of the troopers' equipment lending to their acceleration, even the more-or-less experienced instructors were beyond their capabilities. Their speed made the experience a blessedly short one.

From the bottom third of the mountain, through the protective bales of hay and beyond into the parking lot were strewn the soldiers of Maj. Marshall's unit. While there were no serious (that is, life-threatening) injuries, there were plenty of contusions, a few dislocations, many bruised egos and one unit commander in hot water.

Reactions were swift. The balance of the training was canceled. The manager of the ski area requested their immediate departure and promise never to return. Higher headquarters, unable to disavow its prior approval, frowned and thumped desks and questioned judgments.

Shortly after, whether as a consequence of the fiasco on the mountain or not, Maj. Marshall transferred to the 78th Maneuver Training Command (MTC) at Ft. Dix., N.J. It was there that I first heard the tale.

Whatever the other consequences may have been, Maj. Marshall prospered. While at the 78th MTC, he was promoted to colonel. Transferred to Alaska where he is with the National Fisheries Service, he has, I hope, finally learned to ski, but still has the same imagination and willingness to try that marked the assault down No-Name Mountain.

COL. WILLIAM R. COONEY, U.S. Army Reserve, retired, commanded the 78th Maneuver Training Command at Ft. Dix, N.J., before retiring in 1980.



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At loose ends in one of the Army's most unconventional World War II units, a combat-experienced aerial gunner, used to by-the-book officers, found out why our Commander in Chief has always had a reputation as a nice guy.

By Morton H. Roth

Capt. Reagan To The Rescue



Ronald Reagan was my commanding officer for a few months during World War II. As such, he had the dubious distinction of presiding over —indeed, playing the catalytic role in— a furlough that turned into a four-week-long odyssey.

It was 1943, two years into American involvement in the hostilities. Hollywood was still the glamour capital of the world. Los Angeles newspapers were the only ones in which news of major battles appeared on page two in order to free up the front page for the infinitely more relevant news of the latest movie star scandal.

This is not to impugn Hollywood's patriotism. The town was chauvinistic in its fervor. Not only had many of its foremost citizens joined up, but the Hal Roach Studio had been commandeered by the 1st Motion Picture Unit for production of training films. Nearby, the Page Military Academy, an exclusive boy's military school which, in peacetime, housed the male offspring of Southern California's glitter set, had been incorporated into the

Photo courtesy Warner Brothers



Capt. Ronald Reagan of the U.S. Army Air Forces presents a classroom lecture during World War II.

unit, its rooms serving as barracks as well as headquarters.

The producers, directors, actors, writers, cameramen and technicians who populated the unit's permanent party performed a valuable function.

Prints of the highly professional films they created were sent to camps throughout the country to aid in the training of recruits. In addition to standards like military courtesy and hygiene, their subjects included how to survive in the South Pacific jungles and in the North African desert and how to recognize Japanese or German aircraft.

In 1943, the unit's role was expanded to include aerial photography. Combat footage of World War I had been sparse. The vast advances in aviation between the wars made it possible for planes thousands of feet in the air to film an entire battleground.

Everyone knew that within a year an invasion of Europe would take place. The 1st Motion Picture Unit would train cameramen to film it for posterity.

Actors and directors remained with the training film section. The aerial section of the unit, commanded by Col. Paul Mantz, a noted stunt flyer, conscripted many of the professional cameramen to serve as instructors. Pilots, gunners and combat photographers were recruited also.

Into this eclectic group that autumn marched a handful of overseas veterans, who had already paid their dues by flying combat missions in sundry theaters of war. Each of these men carried a military occupational specialty numbered 940 —"aerial photographer/gunner."

All had performed their chores with huge ring-mounted still cameras, photographing bomb hits or mapping enemy terrain. None had ever been exposed to a 35-millimeter motion picture camera which, in those days, required not only creative talent but also great coordination. The camera had to be wound manually at a constant, nonvarying speed. Try that in a moving vehicle sometime.

I was among the new arrivals, already a three-year veteran of the Army Air Forces (Air Corps before June 1941), having served at Hickam Field, Hawaii, from July 1940 through the Japanese attack and, after July 1942, in the battle of Guadalcanal. My outfit, the 11th Heavy Bombardment Group, had been returned to the United States as war weary in May 1943. We were promised a full year of stateside duty before we could be sent overseas again.

Since I had family on both coasts, had been granted two furloughs, follow by a delightful idyll on detached servi as features editor of an award-winni GI newspaper based in Salt Lake Cit Utah.

Joined there by other returnees, inclu ing those who had survived their m sions over Europe, North Africa or Bu ma, we were sorted out by occupati and reassigned. The photographers amo us went to Culver City, Calif., where were met by Capt. Ronald Reagan, popular Hollywood actor.

He greeted my group of 12 on our rival after an all-night train ride fr Salt Lake City, and immediately demo strated a sense of humor and an inn friendliness.

Responsible for a unique mix of tra sients and permanent assignees, any whom on a given day could be on lo tion in the Mojave Desert simulating North African exterior or at the sho pretending to storm the beach of a Pac ic island, Capt. Reagan managed to ke track of all the loose ends without e losing his composure. According to t first sergeant, he was an excellent adm istrator.

In the mess hall, he was as apt to sitting with enlisted men as with fell officers and it was apparent that he w liked by all. He was always pleasant wh he saw me at headquarters and we changed nods when we passed on t company street. There was little saluti

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MORTON H. ROTH enlisted in the Army Air Corps in 1940 and served through 1945. He was at Hickam Field, Hawaii, during the attack on Pearl Harbor. An aerial photographer-gunner, he served in the battle of Guadalcanal and later in the Aleutian Islands. He is now an advertising executive and free-lance writer.

i the outfit. When Clark Gable returned om a stint with the Eighth Air Force in ngland, it was Capt. Reagan who intro-uced him to my small group.

In Culver City, as returned combat vet-ans, we were treated with deference. vernight passes were available on re-uest, which was fine with me because I id a brother living in Hollywood. Our ities were minimal. We attended a few asses in motion picture filming.

But, from the beginning, the upper echelon seemed to know it would not work. Why beat their brains it training us for a future assignment, ady for shipment to England in, say, bruary or March, when we carried cuments forbidding our return to over-as duty for some months beyond that ne? It was better to concentrate on ger first-timers with actual backgrounds motion picture photography who could shipped out at the unit's convenience. Thus, my request for a Christmas fur-ugh to be spent with my father and sis-'s in New Jersey met with no opposi-n from company commander Reagan. ould be spared, easily. "The only trou-is," he remarked, "all I can give you 15 days."

I protested. "Fifteen days? But captain sir—for crying out loud, I'll blow eight ys in transit. That leaves me only sev-days at home." In that era, the rail-id was the accepted mode of transpor-ion. And no combination of trains d yet been able to traverse the conti-it in under four full days. Commercial travel was nonexistent and military nsport planes were entirely at the mer-of cargo.

t was theoretically possible for a GI hitch a ride on a DC-3 Army trans-t; theoretically, because there was al-st always a waiting list and available ce was usually assigned by rank. First rity always went to cargo of every cription.

he company commander was proper-ympathetic. "Sorry, sergeant," he said, don't make the regulations." Then, ning slowly toward his desk, he added r his shoulder, "Of course, if there a genuine emergency after you were ne and I were to receive a telegram, ight be able to swing a couple of s' extension for you."

Filing that one away for future reference, I brightened perceptibly, stepped back and raised my arm to salute. Capt. Reagan offered his hand. "Have a good time. And if you'd like a weekend pass, tell the first sergeant I said it was OK."

Before leaving, I offered gratuitously, "I saw you in *King's Row* over in Oahu. Great movie."

Capt. Reagan grinned and said, "Forget it. You've already got the furlough."

I then had in my possession a document granting me a 15-day furlough starting on Monday, 15 December. Also in my hand was a weekend pass effective Friday, 12 December.

Unfortunately, the pass read, "Not valid beyond 100 miles of Los Angeles." Aside from the weekend in town, at least it meant I could head for the depot Monday morning without having to report to the base first.

Early on the morning of Friday, 12 December, I packed my gear and contemplated the probabilities for all of 30 seconds, then proceeded to hitchhike to the airport at Inglewood, where I made my desires known to the flight supervisor. "Got a DC-3 taking off in 40 minutes, but you're outranked," the supervisor told me, "by a full colonel." Then, surveying the gunner's wings and the rows of combat decorations on my chest, he asked, "Just get back to the States?"

Sometimes the truth requires malleability. I had actually been back for seven months. "Yes," I replied.

"There it is over on the line," said the supervisor, pointing. "Climb on. Tell them I said you're aboard. Screw the colonel. He's only a stateside desk jockey. He can wait for the next one."

And so it developed that S.Sgt. Roth, carrying a pass which was explicitly invalid beyond 100 miles of Los Angeles, arrived at Newark Airport on the evening of 12 December, three days before the start of his furlough. The transport made

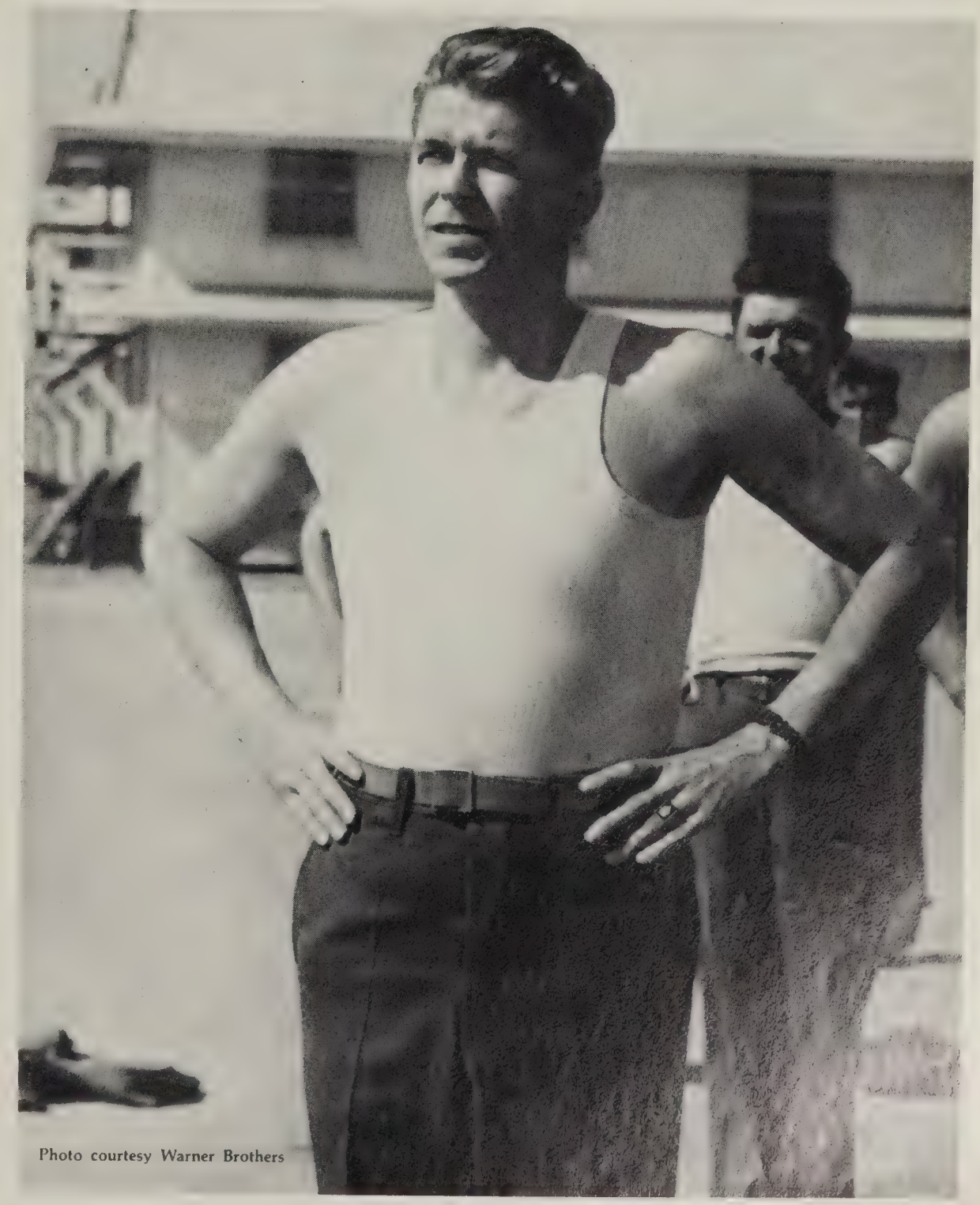


Photo courtesy Warner Brothers

Ronald Reagan appears in the film This Is the Army, *which was released by Warner Brothers Studios in 1943.*

one stop en route at Midland, Tex., to exchange cargo. Evidently, there was no appreciable weight gain in the exchange, since my right to passage was never questioned. Neither, to my relief, did anyone ask to see my furlough documents.

A few days before Christmas, I wired Capt. Reagan to the effect that my father's sudden illness necessitated my presence. Back came a telegram extending my furlough for an additional week. That gave me New Year's as well as Christmas at home. I could now catch a train on 2 January and make it back on the 6th, my new return date.

On the evening of 4 January, the day before I planned to make my presence known at Newark Airport, the Eastern seaboard was hit by a blizzard. Heavy weather continued through the next day.

All flights were canceled. I telephoned every few hours to find out if there was any change. There was not.

It stopped snowing the following morning, 6 January, the day on which I was due in Los Angeles. In those days of propeller aircraft, there were no nonstop flights. Even a "one-stopper" was unlikely to get me back to the base before activity had ceased for the day. At least, I could report to a sentry at the gate. But my luck was not holding.

Two westbound transports and one southbound took off, their fuselages bulging at the seams with freight. Finally, well after noon, I found myself perched atop a wooden crate aboard a plane headed for Middletown, Pa. Upon arrival, I was bounced in favor of cargo and told to come back in a couple of hours.

The military would not accept it, I knew. But, weak as it was, I made the effort. I located a Western Union office in town, from which I sent a ten-word telegram to Capt. Reagan explaining that a blizzard had stranded me in Pennsylvania and would force me to be late in reporting. Sure. Trains ran in all weather, didn't they?

In the early evening, a smaller plane of questionable vintage took me as far as Nashville. A later flight got me to Memphis in time for another blizzard which canceled all subsequent takeoffs. I rented a hotel room in downtown Memphis and met a few congenial sailors and Marines as well as some women at the hotel bar, all of whom I invited to my room for a party. One of my convivial chums invited an MP to join us when he went off duty. Already AWOL and 1,600 miles from my base, that was just about all I needed. The party lasted into the next day. Regrettably, the weather showed no sign of changing.

The eventual flight out of Memphis landed me at Kelly Field, San Antonio, where I was obliged to remain overnight. Then it was El Paso and off again. Next it was Phoenix. And, at long last, four days after the expiration of the extension on my furlough, I made it back to Los Angeles.

By that time, I had been up and down so much I felt like a yo-yo. At least, throughout the odyssey, no one had asked to see my papers. That much was gratifying.

Some time before midnight, I trudged up to the main gate, prepared to surrender to the corporal of the guard who, in this instance, happened to be actor John Beal. Less than eager to handle this tricky situation, Cpl. Beal offered an excuse about the supply room being closed, which meant no blankets or bedding were available. "Why don't you go into town for the night and come back in the morning?" he suggested.

I left the Hollywood apartment of my brother early the next day and, arriving at the post, left my furlough papers with the first sergeant, who was preoccupied with other matters. I made myself conspicuous at breakfast in the mess hall. No one aimed a gun in my direction, threw a rope around me or, for that ma
ter, paid much attention to me at a
None of the notices on the bulletin boa
had my name on it. I made for my roo
in the barracks and unpacked, waiti
for the guillotine to drop.

Ten o'clock passed, then 11:00 a
11:30 with no word from headquarter
My commanding officers in the Pacif
had been "West Pointers" who went stri
ly by the book: house arrest, immedia
loss of combat-earned rank and, ultimat
ly, court-martial. Mitigating circumstanc
were not considered. The suspense w
driving me up the wall. Before I bega
fantasizing about a slow drum roll a
a blindfold, I decided to bring the matt
to a head.

Making my way to the office, I c
lared the first sergeant and demanded
audience with Capt. Reagan. Fortunat
ly, the wait was short.

"What can I do for you, sergeant?" t
future President asked pleasantly. Or w
he playing cat and mouse? On the oth
hand, did he even remember who I wa

"I'm reporting for duty, sir. Just wan
ed you to know I got back late last nigh
I know I'm a few days overdue, but. . .

Capt. Reagan waived a benign han
"Oh, that's OK," he said. "After we g
your telegram from Pennsylvania, I p
you on pass for the time you'd be late

Did somebody say nice guys fini
last?

Tough Spirit

As the executive officer of a basic training company, it is not unusual for me to be at the head of a column on a 15-mile road march. A couple of months ago this was the case.

My call sign was Alpha-1, the next man was Alpha-2 and so on to the rear, Alpha-5.

We had just begun a 15-minute break when the battalion commander arrived. My battalion commander is a tough professional who enjoys coaching juniors to perfection.

He said: "Lieutenant, A Co. doesn't look too hot. Here is what you need to do," and proceeded to give me several things to take care of. Then he stepped back to observe.

Once we were under way again, he came to the front and said, "Lieutenant, you look a lot better, but you still need more. . . ."

I said, "Yes, sir, I'll square it away." Then he jumped into his vehicle and roared off, apparently headed back to headquarters.

I, of course, jumped on the radio:

"Alpha-1 to all units: ensure proper five-meter interval between personnel. Increase distance between units to one-zero-zero meters, over."

"Alpha-1, this is Alpha-5: five stragglers have been picked up, everything is squared away, over."

"This is Alpha-1: Roger Alpha-5, all units be advised the Silver Cluster has departed, over." There was a pause.

"Alpha-1, this is Silver Cluster, over." There was an even longer pause as I stared at my radio.

"Alpha-1, do you read me?"

"Silver Cluster, this is Alpha-1, over."

"Alpha-1, just remember . . . I am still with you in spirit."

2ND LT. PHILLIP A. THOMPSON

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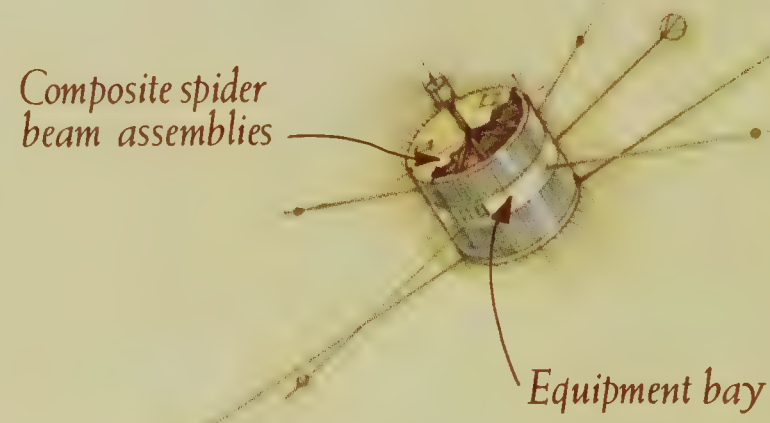
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For your information, our name is Harris.

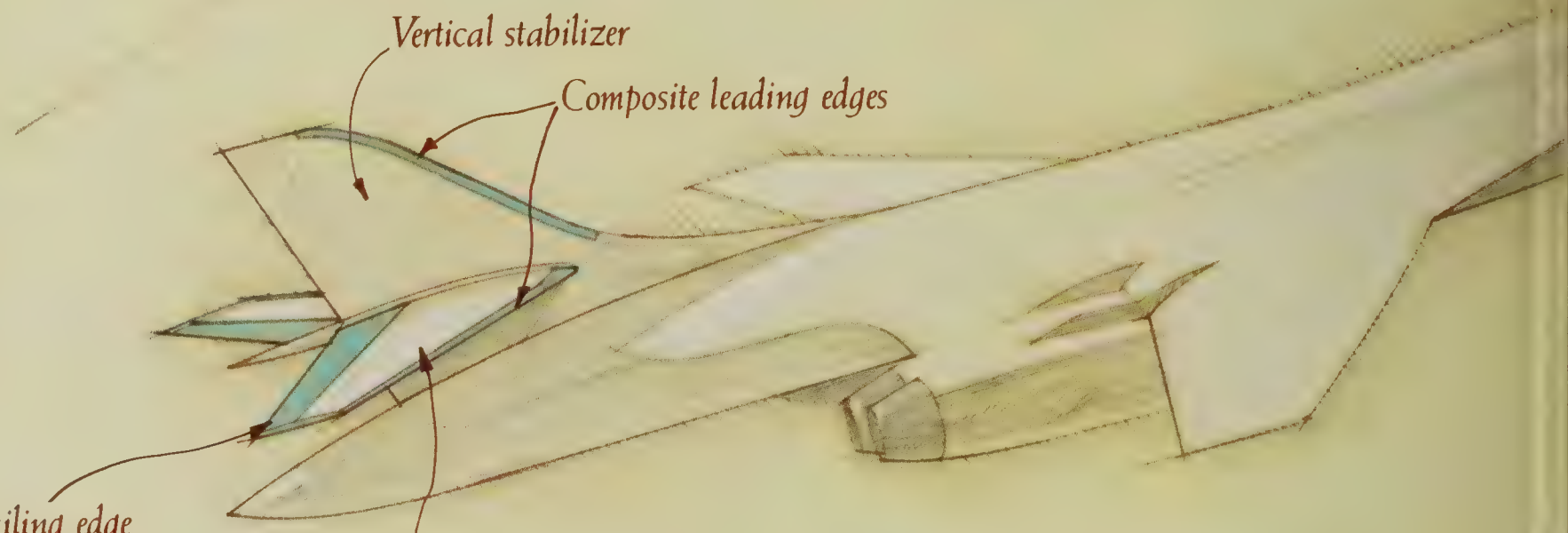
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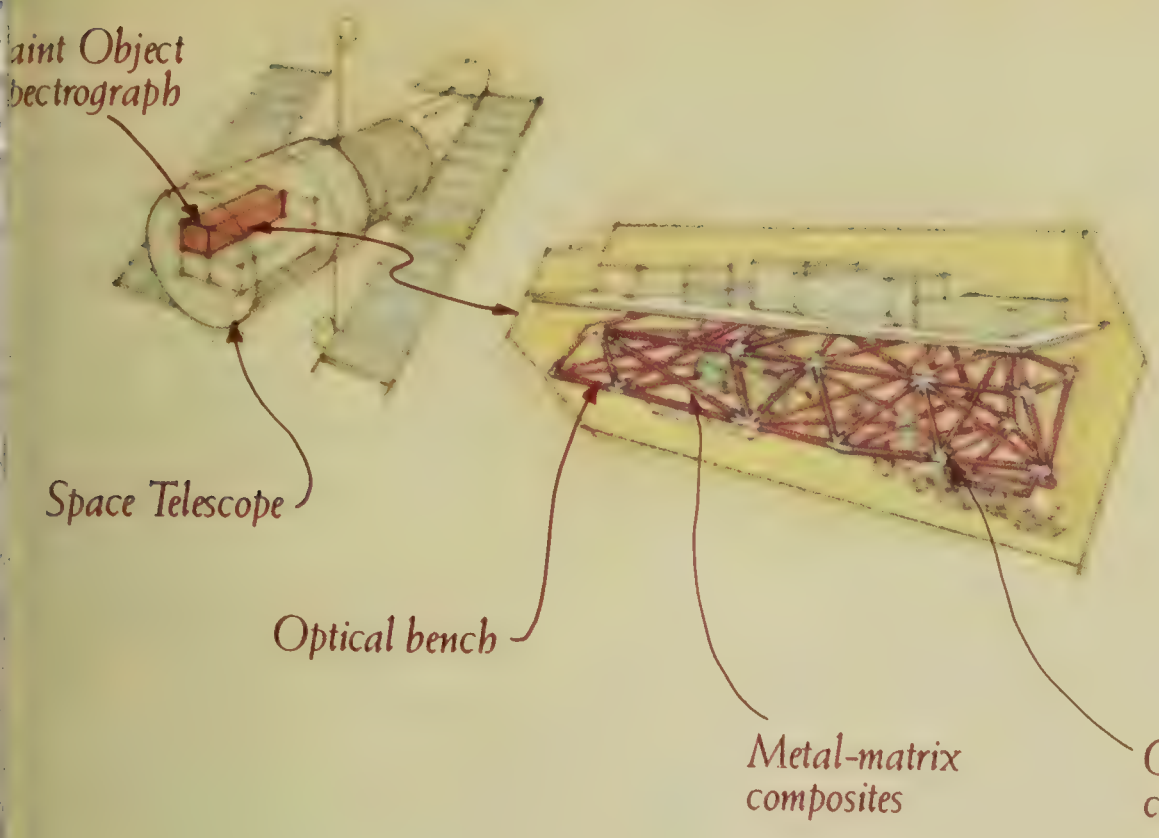
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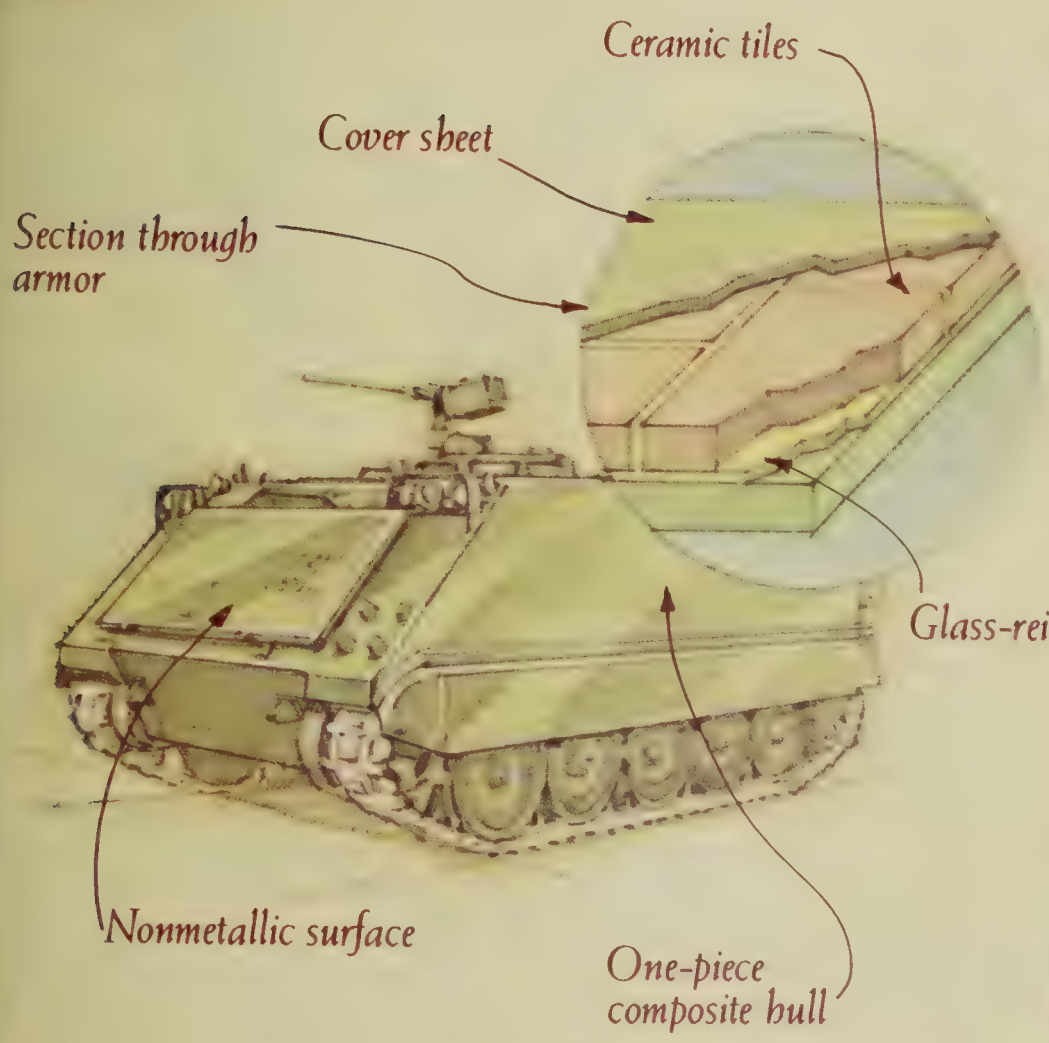
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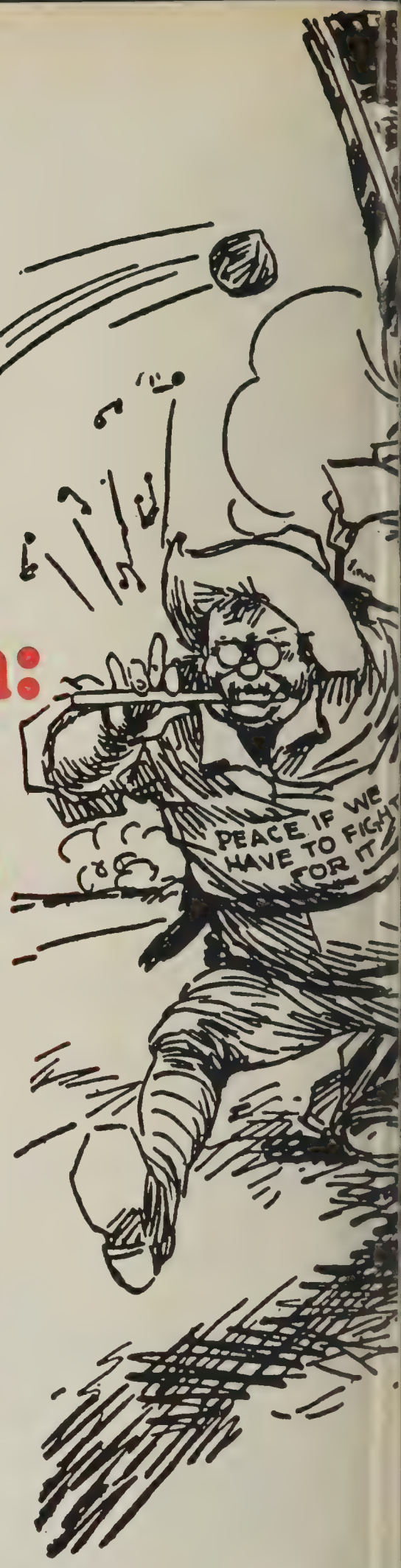
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RE PROVEN. OUR MISSION IS SUCCESS.

The Illusive T. R. Division: Teddy's Last Great Charge



By Donald Smythe, S.J.

In 1917, former President Theodore Roosevelt voiced his desire to lead an American division to Europe against the Germans:

> It is the regret of my life that I am not permitted to serve. Had I been, they would have no fear of political glory to be reaped by me, for I would never have come back. Had they sense, they would have known that.

The "they" he referred to were President Woodrow Wilson and Secretary of War Newton D. Baker; they had denied his request and frustrated the deepest desire of his last days—to die on the battlefield.

At that time, Mr. Roosevelt resembled an old Roman general reciting his deeds in the forum and asking to lead legions against the barbarians again. It was not to be, however. The "T. R. Division" was the great might-have-been of World War I. It was, said Gen. John J. Pershing's chief of staff, Maj. Gen. James G. Harbord, "that dream division around which clustered many hopes, but for which no trumpet ever sounded."

The idea of leading an armed force into combat was not a new one for Theodore Roosevelt. He had done so in 1898 in Cuba, but apart from this, he had thought along similar lines in 1886, 1896, 1908, 1911 and 1916. In 1908, for example, he confided to Kaiser Wilhelm II that in the event of a "big war" he planned to rai a cavalry division.

The T. R. Division idea originated January 1915. Suffering from an atta of fever he had contracted during h South American explorations, Mr. Ro sevelt was depressed. Hoping to che him up, his son, Theodore Jr., invited Oyster Bay, N.Y., Col. Gordon Johnsto an old friend who had served as M Roosevelt's mounted orderly during t Rough Rider days.

He found "Teddy" Roosevelt complai



New York *Tribune*

Theodore Roosevelt's quest for glory ended in frustration as the United States entered World War I, but his plan for a volunteer division and an early American presence in the fighting helped hasten the dispatch of regular forces to France in 1917.

about America's failure to enter the
. Col. Johnston said that the United
es might still enter the war and sug-
ed that the ex-President think of form-
a unit to serve in it. Mr. Roosevelt
mly greeted the suggestion. Thus,
Gen. Harbord, "what was suggested
e or less to divert an ill man became
istoric incident."

Theodore Roosevelt immediately be-
making up a list of men who would
command his force. His chief of
would be Capt. Frank R. McCoy.
His brigade commanders would be Lt. Col. Henry T. Allen, Maj. Robert L. Howze, then-Maj. Harbord and Rear Adm. Cameron Winslow. All agreed to serve, as did his regimental, battalion and squadron commanders.

Word of his plans got around. Henry L. Stimson, President William H. Taft's former secretary of war, volunteered his services, as did Robert Bacon, former ambassador; "Jack" Greenway, former Rough Rider; Seth Bullock, ex-sheriff; and others.

Privately, Mr. Roosevelt doubted there would be war for the United States because he doubted that President Wilson was man enough to ask Congress to declare it:

> He is impossible. I never have any patience with the man who, after his toes have been tread upon, his nose tweaked, his face slapped and spat upon, turns on his tormentor and says: "Beware, sir, lest you arouse the lion!"

On 31 January, 1917, the German government announced unrestricted submarine warfare. Two days later, Teddy Roosevelt wrote Secretary of War Baker to remind him that he had applied to the War Department for permission to raise a division. Did it look like war, he asked? If it did, he would cancel a trip to Jamaica.

Mr. Baker replied: "No situation has arisen which would justify my suggesting a postponement of the trip you propose. Your letter and its suggestion will be filed for consideration should occasion arise."

When the President broke diplomatic relations with Germany, Mr. Roosevelt canceled the trip anyway. On 7 February, as the New York *World* headline proclaimed, "U-Boats Get 14 Ships in a Day," he asked Secretary Baker if Capt. McCoy, his proposed chief of staff, might be sent to him so that they could update plans for the division.

Mr. Baker replied, "No action in the direction suggested by you can be taken without the express sanction of Congress."

Commenting on the Roosevelt–Baker correspondence, newspaperman Earle Looker compared it to "broadsword requests, parried by rapier-like refusals." Frustrated, Mr. Roosevelt is said to have pounded his desk with his fists as he swore between clenched teeth.

Refusing to be put off, he approached

influential friends like Gifford Pinchot, who sought to arrange a meeting with the President's confidant, Col. Edward House. Col. House declined, feeling it was unwise to discuss the proposal before there was actually a war.

Mr. Roosevelt also approached Jean J. Jusser and Cecil S. Rice, French and British ambassadors respectively, asking whether their governments would pay for equipping and training his division if the United States would not.

In March, as war approached, Teddy Roosevelt's enthusiasm mounted. Using existing tables of organization, he and Maj. Gen. Leonard Wood, his former commander in 1898, prepared equipment requisitions for the division, including ordnance, signal, engineer, medical and quartermaster personnel. All were ready for the moment the War Department authorized them. The division would train at Ft. Sill, Okla., in the region where the old Rough Riders had once assembled.

On 19 March, in the wake of the torpedoing of three American ships, Teddy Roosevelt returned to his correspondence with Secretary Baker. He wrote, "In view of the fact that Germany is now actually engaged in war with us, I earnestly ask permission to be allowed to raise a division for immediate service at the front."

Since Capt. McCoy was unavailable to serve as chief of staff, he asked for Capt. George Van Horn Mosely instead:

> If the Department . . . will furnish arms and supplies as it did for the early Plattsburg [N.Y.] camps, I will raise the money to prepare the division until Congress can act, and we shall thereby gain a start of over a month in making ready.

Secretary Baker again parried the request. No such division could be raised without congressional authority, he replied, and a 1906 law specifically prohibited reimbursing parties for money spent without congressional authorization.

Mr. Roosevelt fumed. He simply had to get into the war. On 23 March, he tried again with the secretary. Reminding him of his experience in Cuba with the Rough Riders, he cited as an example of aggressiveness the fact that "we lost a third of the officers, and a fifth of the enlisted men, all within a little over 50 days."

If anything, such remarks hurt his cause rather than helped. As Secretary Baker said later, "We could not risk a repetition of the San Juan Hill affair, with the commander rushing his men into a situation from which only luck extricated them."

Even less effective with Mr. Baker was an astounding argument made in the same letter: "I wish respectfully to point out that I am a retired Commander in Chief of the U.S. Army, and eligible to any position of command over American troops to which I may be appointed."

In other words, if one had commanded the whole, one could *ipso facto* command any part. Logically, Mr. Roosevelt might just as well have argued that, as former Commander in Chief of the Army, a part of which was the Medical Corps, he was thereby qualified to perform an appendectomy.

Secretary Baker forwarded this marvel of logic to the White House. "This is one of the most extraordinary documents I have ever read!" responded the President. "Thank you for letting me undergo the discipline of temper involved in reading it in silence."

The secretary's answer was another rebuff, cold and formal: "The military record to which you call my attention is, of course, a part of the permanent records of this department and is available, in detail, for consideration."

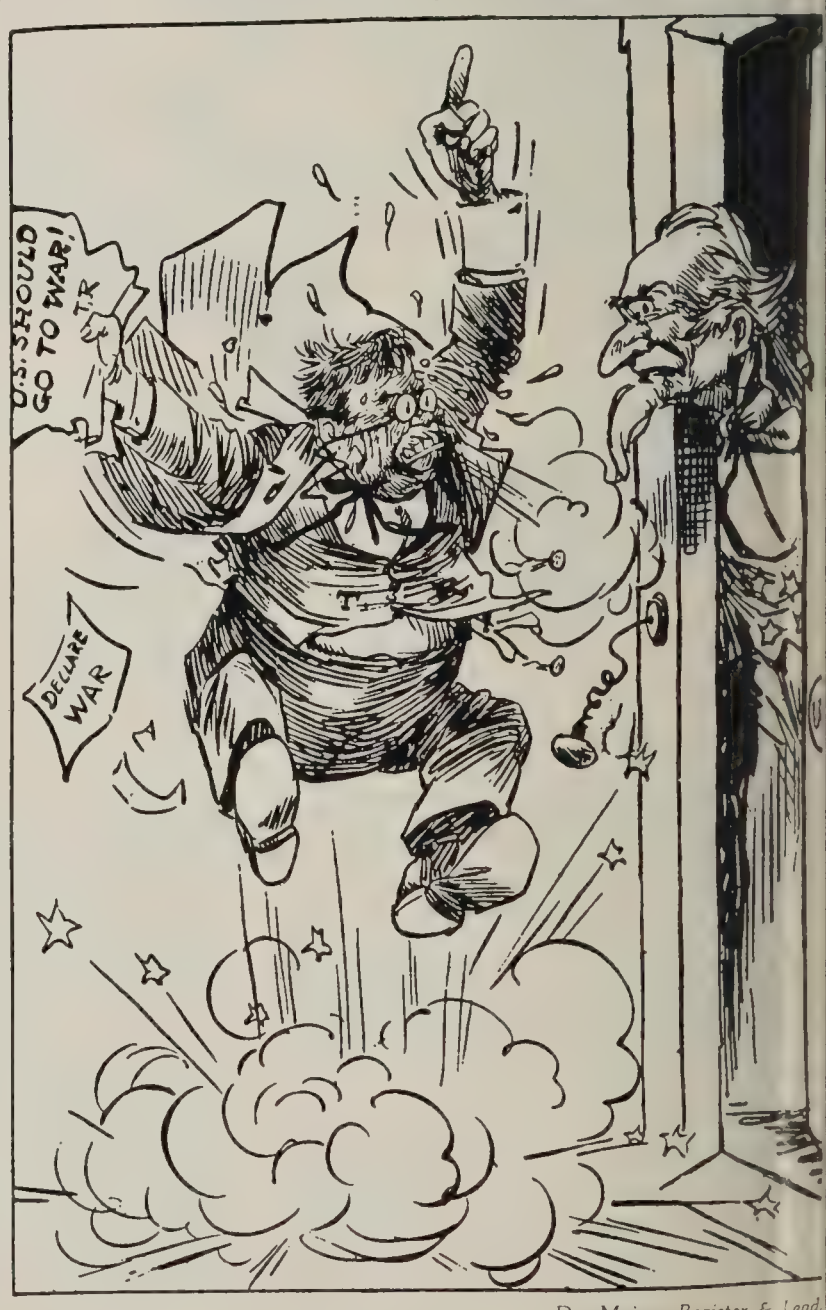
Meanwhile, Teddy Roosevelt was working the other side of the street. He asked his close friend Sen. Henry Cabot Lodge to make sure that any legislation made provision for his division. Sen. Lodge saw Secretary of State Robert Lansing, who promised to put in a good word with Secretary Baker.

Convinced that nothing further could be done until war was declared, Mr. Roosevelt went off to Florida for ten days' fishing. He hauled in a monstrous manray measuring almost 17 feet from fin to fin. "Good sport but not the sort of thing to recommend to a weakling," he chortled proudly.

On 6 April, 1917, Congress declared war. Four days later Mr. Roosevelt went to see President Wilson to plead for his division. What emotions surged within him as he asked this favor of a man he despised, a man who sat in the seat of power he had once occupied, can only be imagined. Both in public and in private, he had said terrible things about the President. He had characterized him as a base demagogue, lacking "a spark of manhood," uttering "weasel words," appealing to "flubdubs and mollycoddles."

The President, too, had strong feelings about his visitor. Like Mr. Roosevelt, he was a great hater. He was not unaware of what had been said about him, or insensible to it. He believed that the ex-President saw the war as a playground for his foolish vanity.

"I really think the best way to treat Mr. Roosevelt," he told his secretary, Joseph P. Tumulty, "is to take no notice of him."

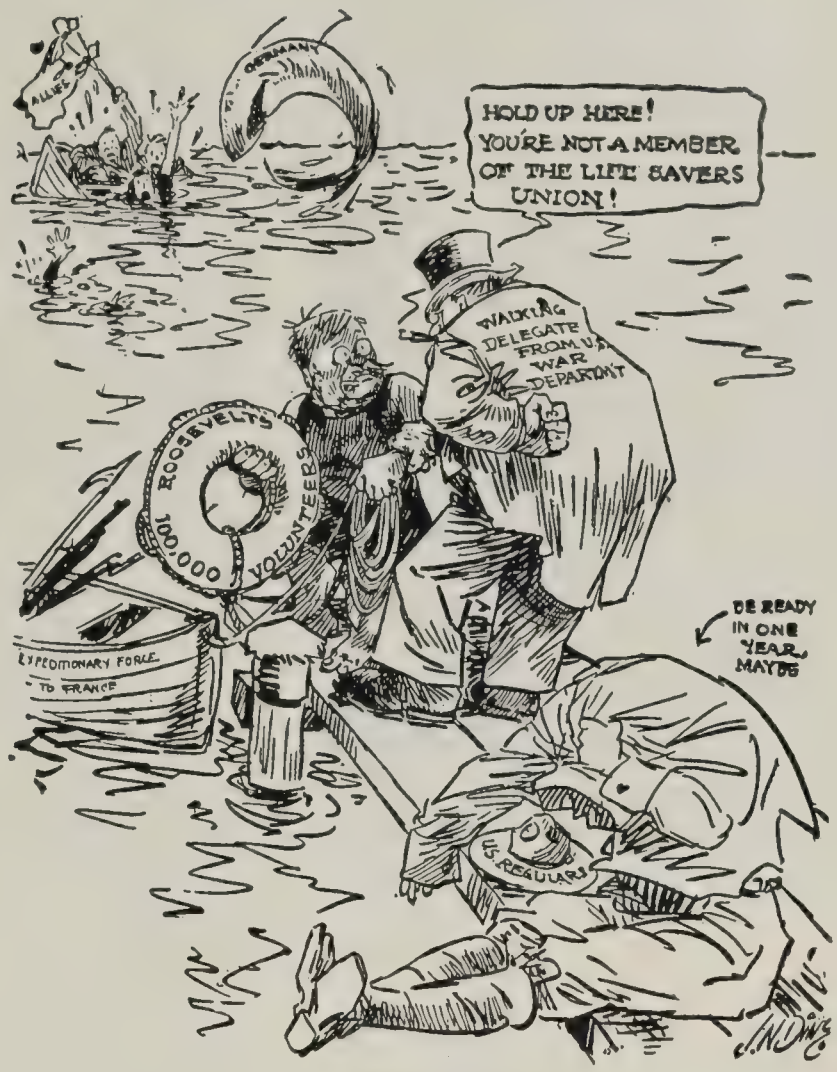


Des Moines *Register & Lead*

DONALD SMYTHE, S.J., professor of history at John Carroll University, Cleveland, Ohio, is currently working on a two-volume biography of Gen. Pershing. His first volume, Guerrilla Warrior: The Early Life of John J. Pershing *(Scribners, 1973), won the Ohioana Library Association prize for biography. Volume II of his Pershing biography will be published in 1986.*



New York *Evening Post*



New York *Tribune*

at breaks his heart and is the best pun-
ment that can be administered. After
while what he says is outrageous in
ry particular, he does, I am afraid,
p within the limits of the law, for he
is careful as he is unscrupulous."

Despite mutual antipathy, the meeting
nt cordially enough. Mr. Roosevelt
gratulated President Wilson on his
message, said it was a great paper
must be made good, and he was there
elp make it good. Bygones should be
ones. If President Wilson would give
mission for the division, he would
his word never to oppose him again
tically.

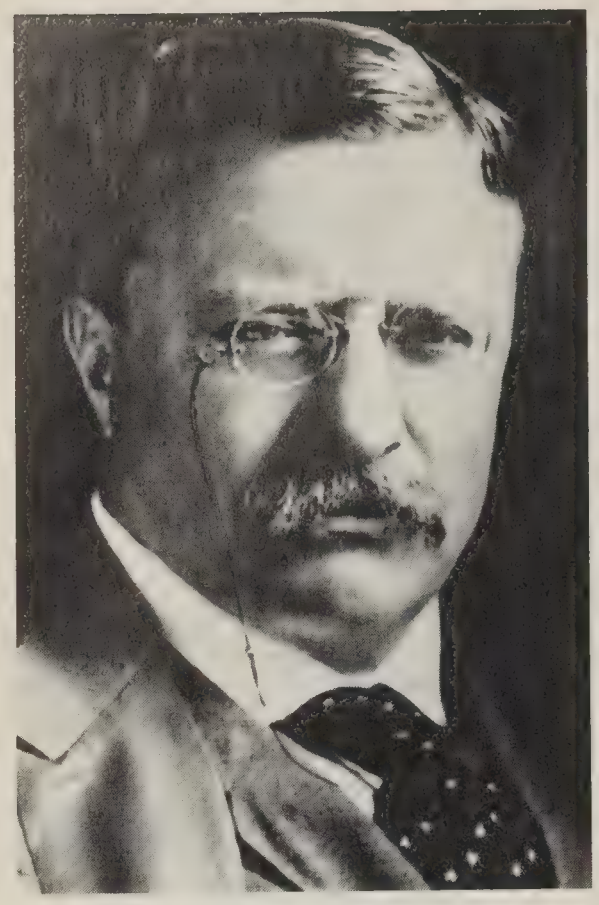
he meeting ended with the T. R. Di-
on still hanging fire. Mr. Roosevelt
ped Joseph Tumulty on the back on
way out, saying, "You get me across
I will put you on my staff, and you
tell Mrs. Tumulty that I will not al-
them to place you at any point of
ger." When Mr. Tumulty comment-
ater on the ex-President's buoyancy,
ident Wilson remarked, "Yes, he is a
t big boy."

r. Roosevelt claimed, in writing about
meeting, that the President was apol-
ic concerning the country's unpre-
dness for war and tried to blame the
ple, saying he could not lead them
faster than they wanted to go. "He add-
ed," said Mr. Roosevelt, "that many peo-
ple had misunderstood him (hastily inter-
polating, with obvious insincerity, that
he did not mean me)."

That night, he held court at the home
of his daughter, Mrs. Nicholas Longworth.
When Secretary Baker arrived, he took
him upstairs and made his pitch: "I am
aware that I have not had enough experi-



Puck



Theodore Roosevelt

ence to lead a division myself. But I have selected the most experienced officers from the regular Army for my staff." Secretary Baker was noncommittal.

Two days later, on 12 April, Mr. Roosevelt penned a short note to the secretary. Were he younger, he said, he would go to war in any capacity, even as a private. But at age 58, he could hardly serve except as a general officer. True, his eyes were bad and he probably could not pass a physical. But Gen. Paul von Hindenburg probably could not either, and he commanded all the German forces.

The following day, fearing lest Mr. Roosevelt be misled into thinking his proposal had a chance, Secretary Baker wrote to him. He opposed the T. R. Division in principle, he said, for two reasons: the War College Division of the General Staff recommended using existing officers for training troops, and any expeditionary force should be headed by professionals "who have devoted their lives exclusively to the study and pursuit of military matters."

Mr. Roosevelt fumed when he read Mr. Baker's reasons:

> He has the blindest faith in the General Staff and the graduates of [the U.S. Military Academy at] West Point. He does not realize that a muttonhead, after an education at West Point or Harvard, is a muttonhead still.

Unknown to Mr. Roosevelt, the War College Division had, as early as 3 February, 1917, recommended that the Army be raised by conscription and "that volunteers be not called." The Army chief of staff, Maj. Gen. Hugh L. Scott, was an apostle of conscription; he was determined that President Wilson would avoid Abraham Lincoln's Civil War mistake of relying on volunteers.

Gen. Scott told Secretary Baker frankly, "If you do not secure conscription now, you will already have lost this war."

Hence, when Mr. Roosevelt proposed his volunteer division, Gen. Scott was unalterably opposed:

> No, Mr. Secretary [Baker], it will not do at all. . . . Mr. Roosevelt proposes . . . to milk the regular army of all its best officers for his one division, to form of the preferred stock the Rough Riders of this war, leaving the great army of millions to be less well instructed and on an inferior status. . . . You will never be able to look in the faces of mothers of sons lost in battle that you have sent over under any but the best trained and most experienced soldiers you can possibly secure. Mr. Roosevelt . . . is not a trained soldier in any respect . . . and you would have small control over him. Consider what a ridiculous figure you would cut, attempting to punish Mr. Roosevelt by court-martial.

Gen. Scott won Mr. Baker to his view. On 5 April, when the Administration sent its army bill to Congress, it called for a draft and made no provision whatever for volunteers. Despite this, Teddy Roosevelt renewed his fight to change Secretary Baker's mind. On 22 April, he sent a rambling 18-page letter to the secretary, discounting the competence of the General Staff and asserting his own: "My dear sir, you forget that I have commanded troops in action in the most important battle fought by the U.S. Army during the last half century. . . ."

Secretary Baker must have smiled. The statement was true, but it was not saying much. The battle of San Juan Hill lasted only one day, and there was no other war with which to compare it.

Meanwhile, support for the T. R. Division was growing. The Harding Amendment, passed in the Senate on 28 April, authorized four volunteer divisions. It produced a rush to enlist. In early May, applications were coming in at a rate of 2,000 a day, some from as far away as Manila and Siam.

While the War Department had received only 30,000 volunteers, Mr. Roosevelt was heading for the 250,000 mark. He had to open a special office in New York to handle all the requests.

No wonder people were impressed. No wonder Henry Watterson, editor of the Louisville, Ky., *Courier Journal*, who had once excoriated Theodore Roosevelt



Woodrow Wilson

as a man who wanted to be king, wro ecstatically:

> The appearance of an ex-President of the United States carrying the Star Spangled Banner over a body of American soldiers to the battlefront would glorify us as will nothing else. It will electrify the world.

The Allies, too, voiced their suppo Marshal Joseph Joffre, visiting Ameri with a French mission, urged that the R. Division be sent at once. A memb of the British mission added:

> The presence of [Theodore] Roosevelt at the head of even so small a force as a regiment of your troops, marching through London now would be worth more than anything else you can do in the immediate future.

Not all the Allies agreed. Gen. G. M. (Tommy) Bridges, senior military me ber of a British mission, warned Sec tary Baker against "amateurs of any sor He also advised his government agai encouraging Teddy Roosevelt's prop al.

Gen. Pershing, future commander the overseas army, felt the same way. we go into Europe with anything exc a well-trained and well-seasoned arm we are going to have hell beaten out us . . . ," he said. "It is absurd to cla that we can become prepared in three four months as Mr. Roosevelt states have no patience with any such ha brained theory as that," he added.

Around 10 May, the roof fell in on M Roosevelt. A House–Senate conference jected the Harding Amendment. The f lowing day, the secretary of war kil



MEMORY MUSCLE

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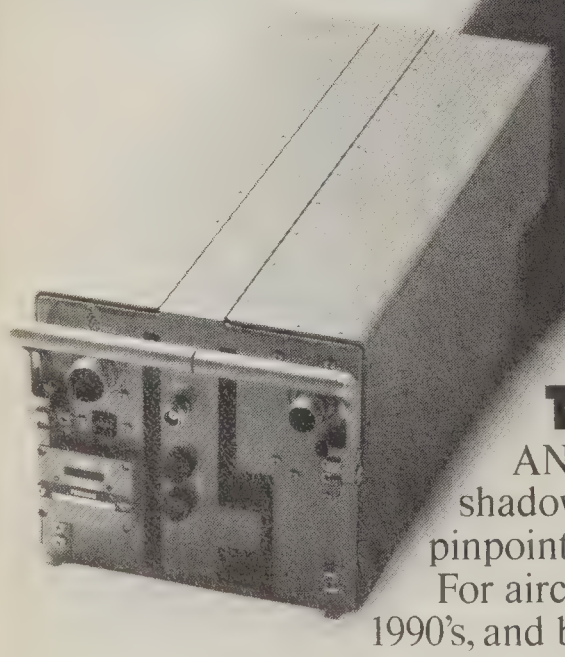
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e T. R. Division with a definitive "no." he answer is final," said the secretary. Although the Harding Amendment was er revived and included in the conscrip- n bill passed by Congress on 17 May, teeth had been pulled. The President s authorized to raise volunteer divi- ns but not required to. The T. R. Di- ion had become optional. As Teddy osevelt well knew, optional volunteers ant no volunteers.

Defeated, Mr. Roosevelt issued a state- nt on 21 May releasing his followers. the trophy room at Sagamore Hill, der the four-star flag that had been his Commander in Chief, Theodore Roo- elt held postmortems with his friends. his is a very exclusive war, and I have n blackballed by the committee on nissions," complained Mr. Roosevelt. tried to pass it off as a joke, but the t was as bitter as gall.

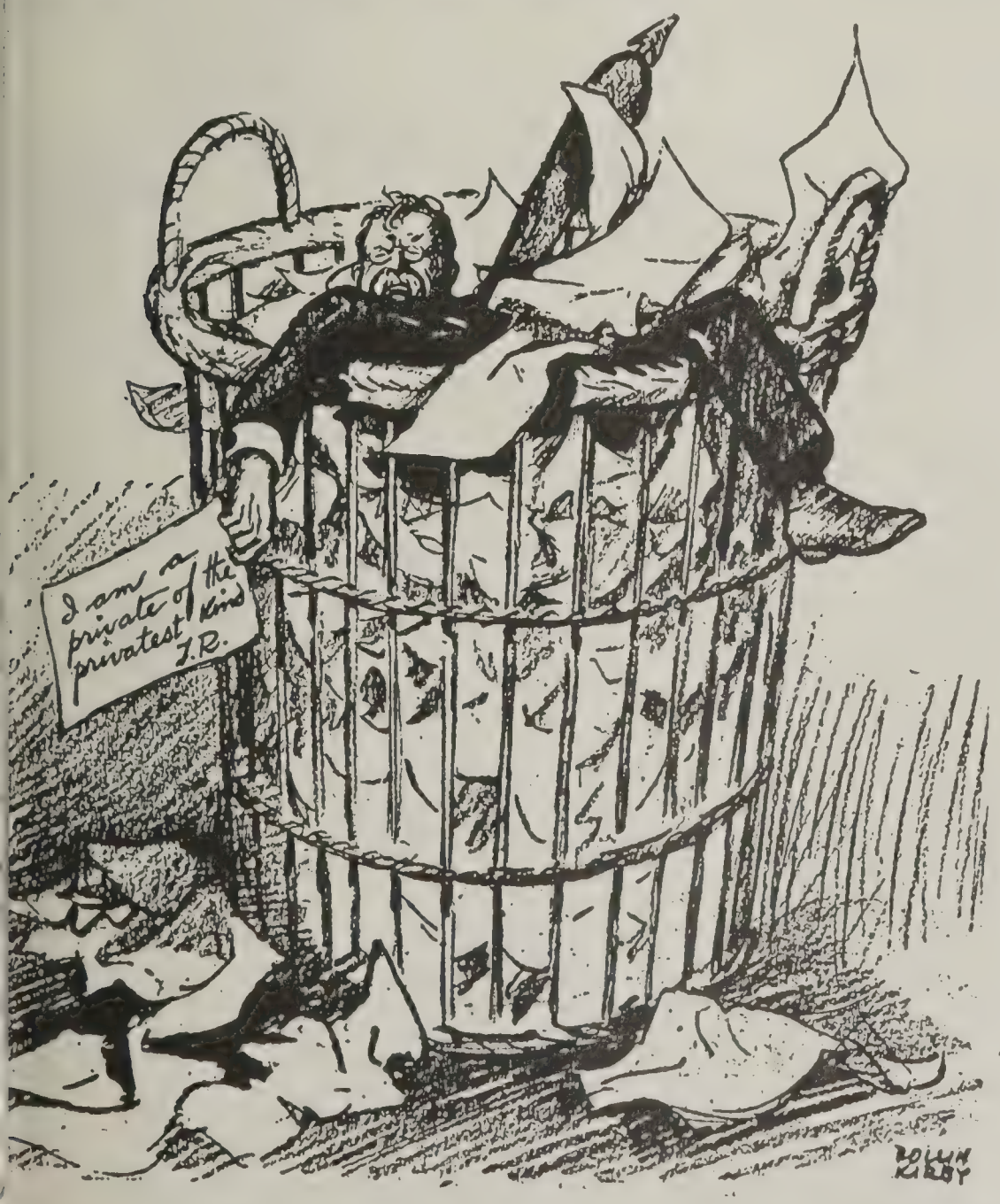
He blamed "that skunk in the White use," that "utterly selfish, utterly treach- us, utterly insincere hypocrite," that ld-blooded, tricky creature" who was tuated by the basest and most con- ptible motives. If our people were really awake, he would be impeached tomorrow. . . ."

He also blamed Secretary Baker, a man "exquisitely unfitted to be secretary of war." "Mr. Baker is a nice man," he said scornfully. "He would be very charming at a lady's pink tea."

Mr. Roosevelt's invectives about President Wilson and Secretary Baker were unjust, but he was so blinded by frustration and hatred that he could not see it. Even so partisan a friend as Gen. Wood told Secretary Baker later that his decision to prohibit the T. R. Division was "wholly right."

In August, Mr. Roosevelt published his correspondence with Mr. Baker. The move served no purpose. Mr. Baker saw it as a lack of judgment, confirming his opinion that Mr. Roosevelt was unfit to be trusted with men's lives.

As the months wore on, Teddy Roosevelt labored mightily to arouse America to an intense war effort, but his heart was overseas. To a question about his health in 1918, he answered, "I feel like I'm a hundred years old and have never been young."



New York *World*

His overseas experience was vicarious, through his sons. Three served in France and one in Mesopotamia. Two were wounded and one, Quentin, was killed.

Concerning Quentin, Mr. Roosevelt wrote, "Only those are fit to live who do not fear to die; and none are fit to die who have shrunk from the joy of life and the duty of life." The words were later carved in stone on the Roosevelt Monument in Washington, D.C.

Something died in Theodore Roosevelt when Quentin did. A friend observed that the "old side of him was gone, that old exuberance . . . the boy in him had died."

The T. R. Division never eventuated, but it did have two important effects. First, it converted the Administration to conscription. Gen. Scott was dead set against volunteers, but Secretary Baker had not been. When Mr. Roosevelt inserted himself—when it became clear that, if volunteers were allowed, Teddy Roosevelt must be too—Secretary Baker swung over to conscription alone.

Second, the T. R. Division accelerated sending American troops to Europe. Originally, the War Department planned to delay this, keeping the small regular Army at home to train recruits. But Mr. Roosevelt's insistence that we "put the flag on the firing line," coupled with Allied pleas for a show of force, persuaded the Administration to send the 1st Division to France in June 1917.

The T. R. Division, then, although it existed only on paper, had an effect on the war. What would its effect have been had it gone to France? That is one of the great might-have-beens of history.

Fond Farewell

It was clear from the start that our colonel and the general did not get along. No one was surprised, then, when the colonel was transferred from his plush Anchorage base to a windswept post 1,000 miles down the Aleutian chain.

Months later, when the general received his orders to return to the States, a send-off party was planned. All colonels received a "command invitation" to attend. Our colonel's terse reply was, "Weather prohibits attending. Will salute your departure from here."

ROBERT DELIGTER

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'Quality-of-Life' Improvements Dominate 1986 Budget

With the Army in need of more housing and other post support facilities and Congress in no mood to grant significant military pay increases, it is not surprising that the proposed fiscal 1986 budget focuses on "quality-of-life" initiatives. Nothing in the budget is more important than improving the living and working conditions of soldiers and their families, noted Army Chief of Staff Gen. John A. Wickham Jr. in his report to Congress.

The new budget plan follows the shift over the past few years away from pay issues and toward standard-of-living considerations. This year the Army is particularly interested in providing more and better housing units for troops overseas, where living accommodations are often not available at affordable prices. Other major improvements sought in the 1986 budget include facility maintenance, community construction, family programs, and morale, welfare and recreation services.

The Bulletin Board

■ **Active-duty pay.** The Administration is seeking only a three-percent pay increase for military personnel, while cutting federal civilian pay by five percent. The military increase is scheduled for 1 July of this year (it is classified as a "special" increase because it falls in fiscal 1985) and the civilian cut would take effect on 1 January, 1986.

Neither proposal is given a strong chance of approval in Congress, although the Administration hopes to sell the military increase by promising no further requests for raises until October 1986. The most likely outcome would be a civilian pay freeze and approval of the three-percent boost in military pay, but delayed to 1 October, or 1 January, 1986.

■ **Retired pay.** A freeze on cost-of-living adjustment (COLA) increases has been sought for the past couple of years, and with the federal deficit the issue of the day on Capitol Hill, the Administration decided to eliminate the COLA increases previously contemplated for fiscal 1986.

■ **Family housing.** The Army family housing appropriation request of $1.6 billion represents a 21-percent increase over this year's projected expenditures of $1.33 billion. The request is broken down into four categories—new construction, improvements, operation and maintenance, and leasing, with the growth occurring in the first two categories. New construction would rise from the $43 million estimated for this year to $189 million, and the improvements account from $0 million to $166 million.

The new construction request would provide funds for building 800 units at Ft. Drum, N.Y.; 600 units at Ft. Ord, Calif.; 200 units at Dugway Proving Ground, Utah; and 476 units in Europe. Additionally, the request includes funds for 334 mobile homes at eight Army installations.

The improvements request seeks to upgrade 1,629 substandard housing units into 1,372 adequate units, renew 3,015 existing units, and provide energy conservation and other improvements to 9,297 units.

The family housing appropriation also sets aside $134 million for 19,170 leases needed for military families overseas and civilian employees living in Panama, Korea and West Germany.

■ **'Quality-of-life' program.** The budget contains $6.3 billion in support of quality-of-life initiatives, which represents a $900 million increase over this year's anticipated expenditures. This increase and the future growth of the program developed from a number of recommendations coming out of the 1984 "Army Family Action Plan."

Allocations for the program are broken down as follows: $2,911 million for facility maintenance and repair; $1,899 million for family programs; $1,067 million for community construction; $284 million for community morale, recreation and welfare services; $106 million for unaccompanied personnel housing operations and furnishings; $22 million for the drug and alcohol treatment and prevention program; and $15 million for chaplain activities.

The military construction budget continues to emphasize troop support facilities geared toward improving the quality of life on post, such as barracks, gymnasiums, child care centers and clinics. A new barracks design, developed within the past year, provides more privacy and living space. Although the living conditions of unaccompanied military personnel have improved considerably over the past few years, the Department of Defense (DoD) reports a need still exists for more than 330,000 barracks spaces at a cost of over $7 billion.

The budget allocates $342 million for environmental restoration, which has become a key concern of all military installation managers. At present, 70 percent of military installations comply with hazardous waste management regulations. Defense planners have established full compliance as the goal, with an interim goal of 90-percent compliance in this fiscal year.

■ **Travel allowances.** In an effort to improve the permanent-change-of-station (PCS) reimbursement system, the budget includes requests to increase household goods weight allowances for all service members, with the maximum allowance being raised from 13,500 pounds to 18,000 pounds; dependent travel entitlements for junior enlisted military personnel; and a temporary lodging allowance for continental U.S. moves covering up to four days and not to exceed $110 a day.

■ **Additional benefits.** Based on the 1984 recommendations of the Fifth Quadrennial Review of Military Compensation (QRMC), the budget incorporates increases in Servicemen's Group Life Insurance benefits and in the death gratuity, while adding a burial expense grant. The fiscal 1986 budget also takes into consideration the recurring issue of providing dental care for dependents of active-duty personnel, but a funded program has not yet been proposed.

■ **Civilian work force.** The budget calls for an increase of about 5,000 spaces for the Army (to a total of about 406,000) and nearly 19,000 defensewide. These figures include both U.S. citizens hired directly by the services and foreign nationals working overseas in U.S. facilities. The number of civilians directly employed by the Army would increase by about 4,000, to a total of 346,000 by the end of fiscal 1986.

The reason for the sharp jump in the fiscal 1986 request is the removal of a hiring freeze imposed by Congress.

Removal of the ceiling was sought by the Defense Department in light of the many readiness-related jobs performed by civilians and the declining pool of young people expected to fill the ranks of the armed forces.



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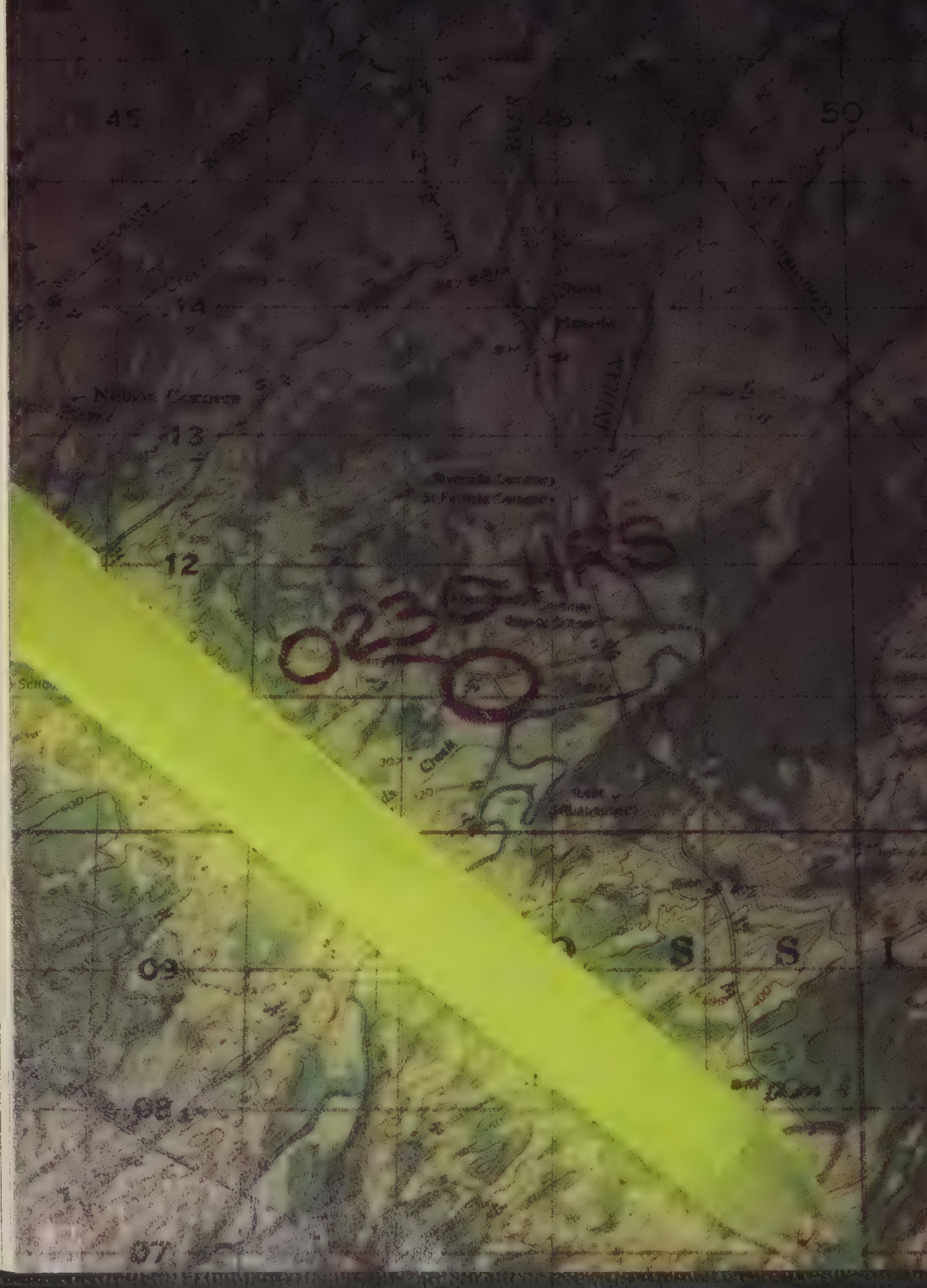
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CYANAMID

rmy HQ Established in Panama o Support Joint U.S. Command

n an effort to provide better support to U.S. Southern Command (SOUTHM), the joint-service command for Latin American region, the Army is igning its forces in Panama under a le headquarters at Ft. Clayton, to be wn as U.S. Army South.

News Call

he new major command will be formed, ding congressional approval, from elets of the 193rd Infantry Brigade (Panawhich now serves as SOUTHCOM's y component command.

As an infantry brigade, it is neither nized nor staffed to fulfill its plan, programming and support responities to a unified command such as JTHCOM," noted an Army spokes-

The U.S. Army Forces Command (FORSCOM) has assumed a major portion of these responsibilities for the brigade in the past," he added.

As a major two-star command, U.S. Army South will report directly to Headquarters, Department of the Army, while serving as the new parent organization of the 193rd Infantry Brigade.

However, Army officials say the realignment will result in no increase in the number of Army personnel in Panama and it should not be construed as foreshadowing a military buildup in the Central American region, where "show of force" training exercises have been conducted on an ongoing basis for the past few years.

"In recognizing the needs of the present, we are actually going back to the way it [the organizational structure] was before," said one official. In 1974, the U.S. Army Forces, Southern Command, was inactivated as a result of military budget cuts and worldwide Army reorganization. At the time, the command's major subordinate unit, the 193rd Infantry Brigade, took over the role of Army representative to SOUTHCOM and fell under the organizational wing of FORSCOM.

The Army has actually had a separate major command in the region off and on since 1917, when the Panama Canal Department was formed as a separate geographical command with headquarters at Quarry Heights. In 1941, the first unified command in the region, the Caribbean Defense Command, brought together Army and Navy forces.

After World War II, Army, Navy and Air Force components in the then-Panama Canal Zone were combined to form the Caribbean Command. The Army's Panama Canal Department was inactivated and redesignated the U.S. Army, Caribbean, this time remaining separate from the triservice theater command.

The U.S. Army, Caribbean, became the U.S. Army Forces, Southern Command, in 1963, at the same time the Caribbean Command was redesignated the U.S. Southern Command. It remained as a separate major Army command in the region until 1974, when its inactivation led to the expanded role adopted by the 193rd Infantry Brigade.

R Requires Face-to-face Talk. Ar- Regulation 623-105, which governs er evaluation reports (OERs), now ires raters and rated officers to have e-to-face discussion of the rated offi- duties, responsibilities and perfor- ce within the first 30 days of the rat- period.

ie change was prompted by an OER ey which showed that, while 80 per- of raters felt they had discussed ob- es with the rated officers, only 31 nt of the rated officers felt an ade- discussion had taken place.

he statistics speak for themselves," e Army Chief of Staff Gen. John A. ham Jr. in a letter sent to rating of- s, emphasizing the need to make o-face talks mandatory.

e OER support form (DA Form 67- will be changed to include a record e face-to-face discussion, with the and the rated officer initialing the to verify the date the discussion place. The revised form will also more space for noting the rated of- objectives and significant contribu- The new OER support forms should ailable next month.

d Unit to Get Apaches. The North ina Army National Guard (NCARwill be the first reserve component o receive the AH-64A Apache add attack helicopter. Co. D of the RNG's 28th Aviation Battalion is to receive 18 of the Apaches in 1987. The aircraft will be based at a new Army aviation support facility at the Raleigh-Durham Airport.

This twin-engine aircraft is capable of full operations 24 hours a day and in all types of weather. The Apache's primary mission is that of tank killer and it comes equipped with laser, infrared and other high-technology systems. Delivery of the first of 675 planned Apaches to Army training installations is now under way.

The first Apache-equipped battalion will be formed at Ft. Hood, Tex., late this year. A further 31 battalions will be trained at the Texas post during the life of the program, for deployment at home and overseas.

VA Proposes $27 Billion Budget. The Veterans Administration (VA) has requested $27.1 billion in budget authority for fiscal 1986 to fund compensation, medical care, construction projects and other programs for an estimated 28 million veterans, eligible family members and survivors of deceased veterans. Fiscal



An early production AH-64A Apache advanced attack helicopter undergoes flight tests at the Mesa, Ariz., assembly plant of the prime contractor, Hughes Helicopters Inc.

1986 outlays are projected at $26.8 million, the same as estimated for the current year, so VA purchasing power would actually decline slightly, to the extent that it is eroded by inflation.

The budget sets aside $15.5 billion for benefits programs, $9.1 billion for medical care and $612 million for construction. A 4.1-percent cost-of-living increase has been incorporated into the compensation and pension payment request. Among the major construction projects for which funds are to be allocated are upgrading of VA medical facilities at Mountain Home, Tenn., major additions to a VA medical center in Philadelphia, Pa., and construction of a new hospital at the VA facility in Houston, Tex.

'Mountain' Division Activated. The Army has activated its 17th division at Ft. Drum, N.Y., and designated it the 10th Mountain Division (Light Infantry).

The division was to be designated the 10th Infantry Division (Light), but the word "mountain" was added to link the unit to the heritage of the original 10th Mountain Division, which saw action in Italy during World War II. Army officials hope the redesignation will strengthen the pride and *esprit de corps* of unit members, who will be authorized to wear the "mountain" tab over the division patch.

The new designation will not, however, affect the unit's structure, missions or capabilities, in that it has been organized to perform strictly as a light infantry unit.

One reserve component brigade will join the division's two active-duty brigades to round out the unit. The division will not be brought up to full strength for two or three years due to the shortage of housing and other troop support facilities at Ft. Drum.



Shoulder sleeve insignia of the 10th Mountain Division (Light Infantry).

GENERAL OFFICER CHANGES



Maj. Gen. Lincoln Jones III from DCSS, ALFSE, to DCG, V Corps.



Maj. Gen. T.P. McHugh from ADC, 1st Inf. Div. (Mech), to DCG, Fourth USA.



Maj. Gen. S.E. Nichols from DCG, Fourth USA, to NIO, GPF, CIA.

Brigadier Generals: **F.M. Bussey** from DCCS, LAMC, PSF, to Cdr, LAMC, PSF; **C.R. Henry** from CS, DLA, to CA, OCA, DA.

■ ***DCSS, ALFSE**—Deputy Chief of Staff for Support, Allied Land Forces Southern Europe; **NIO, GPF**—National Intelligence Officer, General Purpose Forces; **DCCS, LAMC, PSF**—Deputy Commander for Clinical Services, Letterman Army Medical Center, Presidio of San Francisco; **CA**—Competition Advocate.*

Safer Tank Ammo Sought. The Army will soon put the first generation of low-vulnerability tank ammunition in the field, say officials at the Ballistic Research Laboratory, Aberdeen Proving Ground, Md.

A study, prompted by battle analyses following the October 1973 Arab–Israeli war, revealed that the explosion of stowed ammunition was the cause of most tank destruction.

Since that time, researchers have been trying to develop a propellant that will burn under pressure in the chamber of a tank main gun, but not outside the weapon. The 12-year development effort is expected to be completed this fall.

Weight Issue Reemerges. A policy which would deny overweight soldiers entry to Army service schools is under review by personnel officials.

In the past, soldiers found to be overweight according to Army Regulation 600–9 were banned from Army professional development courses such as officer and NCO advanced leadership courses, the Command and General Staff College and the War College.

Officers, warrant officers and enlisted soldiers who are overweight will be barred from enrollment in all military schools beyond initial entry training under the new policy announced by the Army's deputy chief of staff for personn Lt. Gen. Robert M. Elton. Such soldie sent to courses in a temporary-duty s tus and those attending while en route a new assignment would also be deni entry.

Overweight soldiers assigned on a p manent change-of-station basis to a s vice school course of 20 or more wee would be granted a 30-day grace peri in which to bring their weight down an acceptable level, with the option failing the course if they are unable to so.

Competition Advocate Appointed. an effort to encourage greater compe tion for Army contracts, Secretary of t Army John O. Marsh Jr. has created t Office of the Competition Advocate a appointed Brig. Gen. Charles R. Her as the first incumbent.

Gen. Henry was formerly the chief staff of the Defense Logistics Agency. his new position, he will be responsil for recommending annual competiti goals, approving plans for organizatio and personal accountability, overseei competition procurement training a seeking ways to eliminate barriers to co petition.

Cheaper Cartridge Cases? The Arr Armament Research and Developme Center at Picatinny Arsenal, N.J., awarded a contract to develop more ec nomical methods for manufacturing co bustible cartridge cases to the Brunsw Corp., and its French partner, *Soci Nationale des Poudres et Explosifs* (S PE). The effort is focused on field ar lery ammunition, which, in U.S. servi has used fixed ammunition with br shells, or separately loaded powder b in the larger calibers. Combustible a semicombustible fixed ammunition been used in U.S. tank guns, with mix success.

The contract calls for Brunswick a SNPE to review various production wo on combustible cartridge cases and to tablish improved manufacturing techniq for propellant case bodies for 155-m howitzers. They will employ a spiral wr process, with nitrocellulose serving as primary material. This process is co sidered to be the most economical w known to produce combustible cartric shells.

The contractors are to deliver 100 c bodies, fabricated at SNPE's facilities France, to Picatinny Arsenal late this su mer for test-firing by the Army. Bru wick has manufactured a variety of o nance products at its Sugar Grove, V plant in the past. SNPE is one of the ropean leaders in producing propella and powders for ammunition and exp sives.

SCIENCE/SCOPE

A laser that won't cause blindness or other eye injuries will be used in a rangefinder now under development by Hughes Aircraft Company for the U.S. Army. The lightweight device, designated the AN/PVS-6 Mini Eyesafe Laser Infrared Observation Set (MELIOS), resembles a binocular case. Its neodymium yttrium aluminum garnet laser beam is sent through a chamber, or cell, filled with high-pressure methane gas. There the 1.06-micron wavelength is transformed into a wavelength of 1.54 microns. The new signal is safe because it never reaches the retina, but instead is absorbed in the vitreous humor, the white area of the eye between the retina and the lens. MELIOS is being developed under a competitive contract from the U.S. Army Night Vision and Electro-Optics Laboratory.

Two types of miniaturized infrared systems designed for airborne reconnaissance can be used in aircraft as diverse as high-speed, low-flying strike fighters and remotely piloted vehicles. The systems provide real-time infrared imagery which can be viewed in a cockpit, relayed to a ground station through a secure data link, or videotaped for later analysis. One system, the Linescan 4000, is in development for the Tornado aircraft and is designed for high-speed aircraft. The other, the Linescan 2000, is designed for remotely piloted vehicles and slow aircraft. Hughes markets the systems under agreement from British Aerospace Dynamics Group.

Norway's new Acquisition Radar and Control System, which combines 18 mobile radars and fire distribution centers for the Adapted-Hawk antiaircraft missile program, draws on technology from other programs. Kongsberg Vaapenfabrikk of Norway provides computers it had developed for the Norwegian armed services and multicolor display consoles it is developing for the Norwegian-West German submarine program. Hughes provides the new Low Altitude Surveillance Radar (LASR). The radar uses a mechanically rotated antenna to provide 360-degree coverage with phase scanning for elevation coverage and frequency for back scanning.

Helicopter pilots can fly low-level missions at night by using a new infrared system. The Hughes Night Vision System (HNVS) projects TV-like pictures of terrain on the pilot's helmet visor to aid in navigation through darkness, haze, or smoke. It uses a forward-looking infrared (FLIR) sensor mounted in a turret under the nose of the helicopter. When the pilot glances in any direction, a helmet servo linkage causes the turret to aim automatically along his line of sight. HNVS can superimpose flight symbology on the helmet to further save the pilot from looking down at cockpit instruments. Hughes designed, developed, and produces the system.

Single-seat military aircraft will be able to fly low-altitude attack missions at night with a system now undergoing evaluation by the U.S. Air Force. The Low Altitude Navigation and Targeting Infrared System for Night (LANTIRN) permits attacks at night and in low-visibility weather while relieving a pilot of many manual targeting functions. Elements include infrared sensors, an automatic multimode tracker, a laser designator/ranger, and a terrain-following navigation system. These components are mounted in two pods installed under the aircraft. Hughes, as subcontractor to Martin Marietta, has supplied five modified Imaging Infrared Maverick air-to-surface missiles along with launchers and a missile boresight correlator (the device which automatically hands off targets from the pod sensor to the missile). LANTIRN is designed for the F-16, F-15, and A-10 aircraft.

For more information write to: P.O. Box 11205, Dept. 68-2, Marina del Rey, CA 90295

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AIRCRAFT COMPANY

Tax Deductions Extended. The Internal Revenue Service has postponed until 1 January, 1987, a decision to eliminate some federal income tax deductions for mortgage interest and property taxes paid by military homeowners. The Treasury Department had proposed elimination of the tax break, at least to the extent that interest and property tax costs are covered by tax-free government housing allowances.

The proposal was to go into effect this year but was delayed until 1986 in a decision taken a few months ago. The further extension gives Congress more time to evaluate the overall impact of the proposal, which would affect some 290,000 military families. Legislation is also being prepared to provide permanent protection of military homeowners' deductions, note Defense Department officials.

Patriot Goes to Europe. The Army has deployed its first operational Patriot air-defense missile unit to Europe, following successful testing of the weapon's capabilities under simulated combat conditions at White Sands Missile Range, N.M.

The 4th Battalion, 3rd Air Defense Artillery, from Ft. Bliss, Tex., accompanied the missile system to Giessen in central West Germany. The battalion was formed in 1983 to become the first of several Patriot units trained at Ft. Bliss for deployment to Europe.

The Patriot system is being fielded by the United States, West Germany and The Netherlands in an effort to bolster NATO air defenses. It replaces the Nike-Hercules system and several Hawk missile battalions.

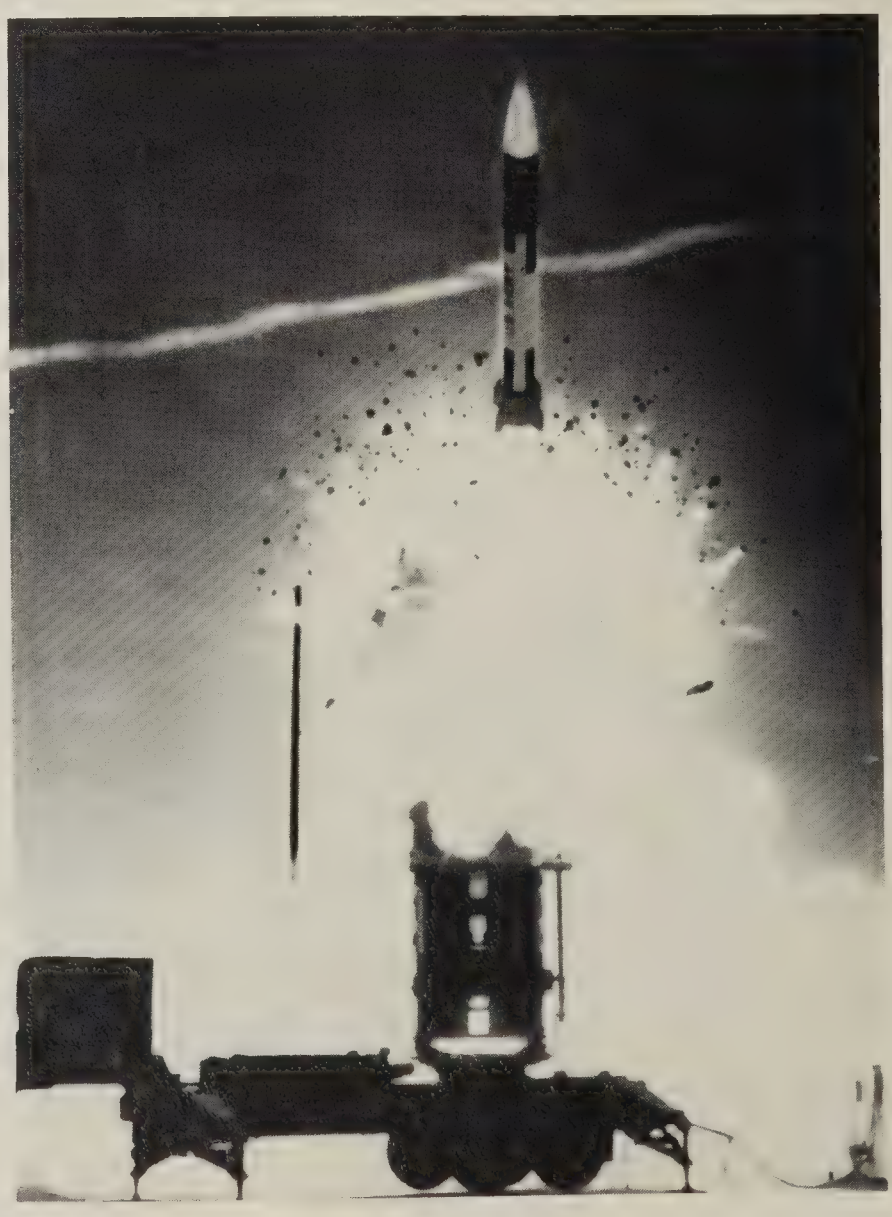
The Patriot is perhaps the most capable and versatile air-defense missile in the world. It can track up to 50 targets simultaneously and guide five missiles in flight to a range of 37 nautical miles.

Computer System Completed. The Ada language system (ALS), supporting the new computer language sponsored by the Department of Defense (DoD), has been completed and has successfully passed all phases of Army formal qualification testing.

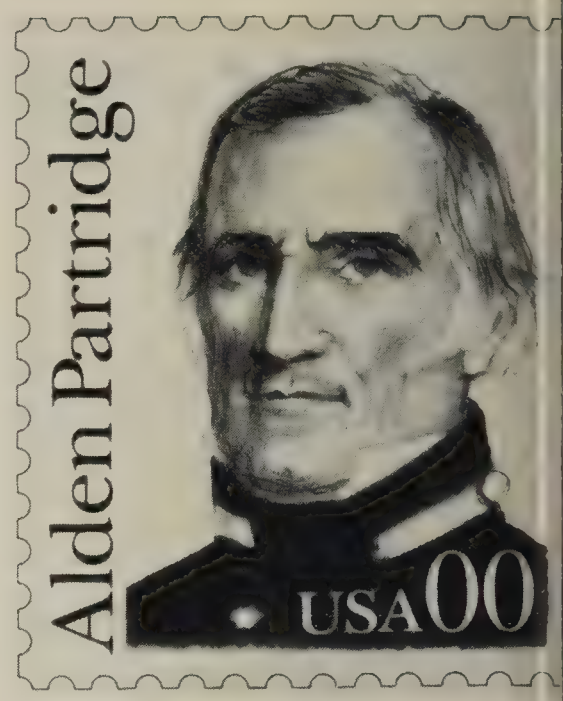
The support system's developer, SofTech Inc., is delivering the ALS to the Center for Tactical Computer Systems at the Army Communications and Electronics Command, Ft. Monmouth, N.J.

Ada is the computer language trademarked by the U.S. government for use by DoD to obtain the long-term benefits of language commonality, reliability, portability and productivity across a wide range of computer systems.

The ALS has more than 70 programming tools to enable the Ada programmer to reach a multitude of different computer language sources and to locate information.



A 2,200-pound, 17-foot Patriot air-defense missile is launched during testing of the weapon, the first units of which have been deployed to Germany.



This commemorative stamp has been issued by the U.S. Postal Service in honor of Alden Partridge, U.S. Military Academy superintendent, early nineteenth-century educator and founder of Norwich (Vt.) University. His pioneering role in advocating and implementing plans for the education of citizen-soldiers ultimately resulted in the creation of the Reserve Officers' Training Corps (ROTC). He helped establish at least seven other military schools.

Pentathlon Support Ends. The Arm is phasing out its support of the U. modern pentathlon due to budget co straints, according to officials at the Pe tathlon Training Center, Ft. Sam Hou ton Tex. The center trains athletes on b half of the U.S. Modern Pentathlon A sociation.

The facilities at Ft. Sam Houston pr vide U.S. military, civilian and some fo eign athletes the opportunity to train swimming, running, fencing, shooti and horseback riding, the five sports th comprise the modern pentathlon. T pentathlon association has an option lease the Army's facilities when the phas out is completed this summer.

New Desert Training Site. Dugwa Proving Ground, Utah, will replace F Bliss, Tex., as the desert training site f Army Rangers, due to the expansion other training exercises at the Texas pos The 1,300-square-mile proving grou was selected because of the variety desert climate and topography it contain including barren soil, sand dunes a mountains.

Approximately 150 Ranger studen will attend the first desert training cla at Dugway next month. Plans call for Ranger classes to train there annuall The Infantry School at Ft. Benning, Ga hopes to establish a permanent dese training camp at the proving ground wit in a few years.

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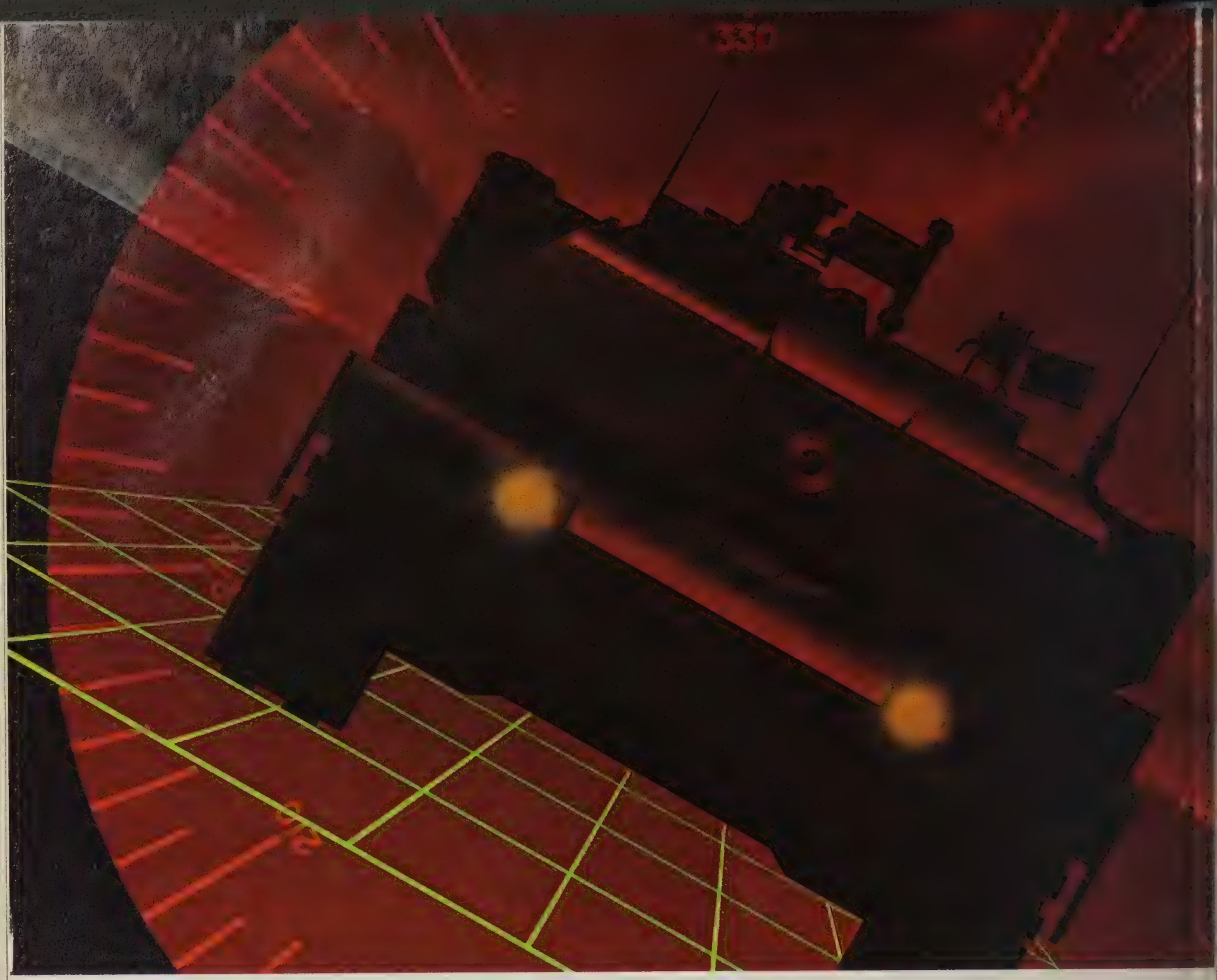
Garrett's NBC system also delivers significant extra savings when on-board gas turbine power, like a Garrett APU or main engine, is available.

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Shown below are some of the vehicles which can be equipped with the VNAS system.



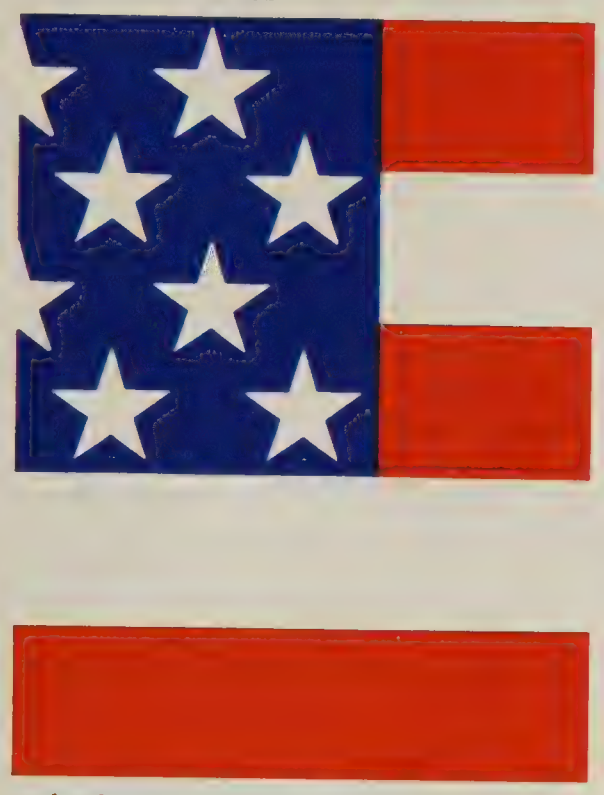
luntary National Service Proposed

bligations of Citizenship Need to be Reemphasized

Reconstruction of Patriotism: Edu-tion for Civic Consciousness. *Morris nowitz. University of Chicago Press, 301 South Ellis Ave., Chicago, Ill. 0637. 220 pages; index; $22.50.*

By William P. Snyder

rofessor Morris Janowitz of the Uni-versity of Chicago is a pioneer in ring interest in contemporary nation-curity policy among American schol-His landmark book, *The Profession-oldier*, changed the military's view of . His latest book is concerned with meaning of citizenship.



Books

n important component of citizenship triotism, which he defines as "a pri-lial attachment to a territory and a ty—a deeply felt and primitive senti-of belonging; a sense of identifica-similar to religious, racial or ethnic ification."

nce World War II, according to the or, the meaning of citizenship and otism has changed. Rights are now nasized at the expense of civil obliga-. As a result, the civic consciousness tial to a democratic society has erod-How can a balance between rights obligations be restored?

ring the nation's first 150 years, e-born and immigrant citizens de-ed a high sense of civic conscious-for three reasons. First, the citizen-er concept of the colonial and revo-nary periods joined the rights and ations inherent in citizenship. The nas endured and today finds expres-in the reserves.

ond, public school civics instruc-often naive, inculcated strong na-listic and patriotic beliefs. Between and 1940, civics education was es-ly important in helping to assimi-mmigrants into the larger culture. y, mass conscription and military e during World Wars I and II un-ed citizenship obligations for large ers of Americans.

e decline of a strong sense of civic iousness over the last four decades ome largely because of changes in education. Under the tutelage of science intellectuals, civics classes ed a more critical stance, which ne-d an explicit concern for citizen-Obligations were limited to voting and other forms of political participation.

The effects of military service also decreased, for the draft worked imperfectly during the 1960s and ended with the all-volunteer force in 1973. Bilingual education and the Vietnam experience further contributed. With civics instruction now fostering "communalism," two groups, blacks and Hispanics, remain to a large extent outside the mainstream of American society.

If the schools have failed and a return to conscription is unlikely, what, then, is the solution to our crisis? Mr. Janowitz argues for a linkage between education and group affiliation. Group identification is essential to "the mastery of conventional academic skills," yet divorcing work experience from the curriculum has prevented the schools from serving the needs of disadvantaged youth.

The best way to restore civic consciousness, the author believes, is through a system of national service "involving both military and civic components" on a voluntary basis. Programs like the Peace Corps and VISTA are useful, but Mr. Janowitz hopes for new and possibly expanded civic opportunities to be developed.

As for the military component, he favors two years in the combat arms, with compensation mainly in the form of educational benefits. This would benefit those who serve and the military units they join. He also strongly endorses Charles Moskos's proposal of tying federal educational assistance to some form of voluntary service. Political interest in these proposals, Mr. Janowitz believes, is growing.

A brilliant, original and sometimes difficult book, with wide-ranging and provocative analysis, its broad strokes are certain to provoke sharp responses from social scientists and education specialists. The contrast between his diagnosis and his remedy will disturb some readers. Can volunteer national service involving a handful of American youth in its civic component really be taken seriously as a solution?

Drawing attention to and defining more precisely a worrisome trend is an important first step. Since military service, volunteer or conscript, is so central an element in the analysis, the book is especially relevant for those in leadership positions in the armed forces.

WILLIAM P. SNYDER, a retired Army officer, is a member of the Texas A&M University faculty.

'Good Primer'

Nuclear Policy For the Novice

S.I.O.P.: The Secret U.S. Plan for Nuclear War. *Peter Pringle and William Arkin. W. W. Norton and Co., Inc., 500 Fifth Ave., New York, N.Y. 10036. 241 pages; index; $16.95.*

By Gen. Bruce Palmer Jr.
U.S. Army, retired

Single integrated operational plan (S.I.O.P.) purports to be a history of American nuclear defense policy and of the evolution of U.S. strategic nuclear warfare planning from its post-World War II beginnings up to the present. Although brief and incomplete—largely because it is based on relatively limited unclassified sources—the book gives an interesting and reasonably accurate account of the early years.

It brings out, for example, the uniservice, very closely held nature of early planning when the commander of the Strategic Air Command, U.S. Air Force, virtually monopolized strategic nuclear targeting and for years successfully resisted sharing control of the basic nuclear war plan of the nation with anyone else, including the Commander in Chief.

The authors, Peter Pringle, a news correspondent, and William Arkin, a defense policy analyst, possess no particular background or experience with respect to their subject, but are highly crit-

ical of Department of Defense (DoD) nuclear planning. Their book, nevertheless, is a good primer on U.S. strategic nuclear forces, bringing out the unique characteristics of each component, as well as their respective strengths and weaknesses. In this connection, the authors, seemingly in an unwitting way, provide strong support for the U.S. concept of a mutually supporting "triad" of nuclear forces.

The authors also do a good job of describing the strengths and weaknesses of the command and control capabilities, communications systems and early-warning networks that support our nuclear forces. But the strategic air-defense side of U.S. nuclear forces, such as civil defense, strategic air defense and antiballistic missile defense, are essentially left untouched. Moreover, the complexities and subtleties of nuclear war-planning are hardly scratched.

In discussing their subject in more current terms, the authors are less convincing, especially with respect to the Reagan Administration, where their superficial coverage is mostly conjectural. Indeed, their thesis is that the United States under President Reagan is embarked on a dangerous and futile search for the me to ensure a "victory" in a nuclear w

But the authors greatly overstate th case, often confusing political rhet designed for public consumption w real-world war-planning, to which t are fortunately not privy. There is a co pletely legitimate rationale for limit access to actual war plans to only th with a need to know; but, unfortunat there are those, bearing no responsibi for the nation's defense, who see no ha in public disclosure of secret plans.

In short, the book offers little n to informed readers, but a considera amount of information to the uninform The authors' prose, however, is of overly dramatic and their style exagg ated. The result is a somewhat disto picture of their chosen subject.

GEN. BRUCE PALMER JR., U.S. Ar retired, is a former acting chief of st U.S. Army.

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The Editors

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Hitler's Plan Adopted Too Late

Germans Caught in Stalin's Tra

Operation Barbarossa: Strategy and Tactics on the Eastern Front, 1941. *Bryan I. Fugate. Presidio Press, 31 Pamaron Way, Novato, Calif. 94947. 415 pages; illustrations; maps; notes; bibliography; index; $22.50 cloth.*

By Earl F. Ziemke



When Adolf Hitler sent the German forces east on 22 June, 1941, he and his military high command believed Operation "Barbarossa" would defeat the Soviet Union within ten weeks. Barbarossa ran its course during that summer, but the German victory did not come—then or ever. Bryan I. Fugate is the latest of many writers, in the West and the Soviet Union, who have attempted to answer the question, "Why?"

For Mr. Fugate, as they were for his predecessors, the essential facts in the matter are straightforward enough. Hitler and his generals believed the *blitzkrieg* technique that had served them well against Poland in 1939 and France and the Low Countries in 1940 would suffice to defeat the Soviet Union if the Soviet forces could be brought to stand and be smashed, but they disagreed on how to achieve this end.

The German generals and the General Staff wanted a massive thrust in the center, toward the Moscow region; Hitler preferred the north, the Leningrad area, and, particularly, the Donets Basin industrial complex in the south as the chief objectives.

Both approaches were tried; first, the thrust in the center, then, in August 19 on Hitler's insistence, others in the no and the south. The result was a gr tactical spectacle—an example of *b krieg* unmatched, and that set the st for an equally unparalleled strategic saster.

The author has subjected that para of success crowned by failure to a rad reinterpretation. In his view, the strat that counted was Joseph Stalin's, not ler's or that of the German generals the General Staff.

Stalin, too, had made calculati and he had concluded, according to Fugate, that the Germans could not stopped outright, but would have to lured deep into Soviet territory, w down and, at the last, forced to "rup themselves" at Moscow. Consequen the great battles of encirclement du

summer of 1941 in which Stalin sac-
ed Soviet troops by the hundreds of
sands were really deliberate baits
deceptions designed to draw the ene-
nto a trap laid for them at Moscow.
his, the author contends, also proves
r to have been by far the best strate-
on the German side. The generals,
notably the chief of the General
, Gen. Franz Halder, and Gen. Heinz
erian, the commander of the Second
.er Group, blinded by professional
y, could think of nothing better than
harge headlong into Stalin's trap.
tler's instinctive preference for the
n and the south, on the other hand,
ld have denied Stalin the victory at
cow in December 1941, would have
n the Germans a chance at a fresh
in 1942 and would have perhaps
n them time to rethink their strategic
lem.
r. Fugate is a persuasive writer. He
a good story, and he has assembled
ostantial fund of information (includ-
rder of battle and statistics that war
rs may find useful) pertaining to the
two months of the Soviet-German

reading this book, however, one
s to be aware that its most striking
ngs, such as those concerning Stalin's
Hitler's roles, are hypotheses arrived
speculation on circumstantial evi-
e—that this is history as it could,
aps, have been, but not necessarily
actually was.

L. F. ZIEMKE, Ph.D., former supervisory historian at the Army's Center of Military History, is a professor of history at the University of Georgia, Athens.

Future Difficulties Foreseen

History of Soviet Energy Policy

Energy Economics and Foreign Policy in the Soviet Union. *A. Hewett, ed. The Brookings Institution, 1755 Massachusetts Ave., N.W., Washington, D.C. 20036. 228 pages; index; $28.95.*

By Col. James B. Motley
U.S. Army, retired

In April 1977, the Central Intelligence Agency (CIA) predicted that Soviet oil output would peak in 1980, then fall rapidly with the Soviet Union becoming a net importer of oil. Some observers believed that such a drop-off in oil production would so menace the Soviet economy that a Soviet military threat to Middle Eastern oil was inevitable.

Soviet oil output, however, did not fall in the early 1980s. By substituting gas for oil in domestic uses, the Soviets have been able to continue to increase oil exports.

Today, "the current concern of Western countries is that an energy-abundant Soviet Union will flood Western Europe with natural gas, driving out most competitors and capturing the bulk of the market."

In this book, the editor—a senior fellow in the Brookings foreign policy studies program—analyzes the recent history of and prospects for the Soviet Union's production, consumption and export of energy; the implications of those for Soviet economic performance; and the possible links between the energy sector, the economy and Soviet foreign policy.

Mr. Hewett concludes "that the Soviet Union is likely to remain a net exporter of energy throughout the 1980s. Whatever reasons the Soviet Union might have for increased activity in the Persian Gulf, difficulties in the energy sector will not be one of them."

The book sets aside some of the oversimplified questions regarding the Soviet energy sector: Will the Soviets have enough oil in 1985? Will the Soviets be able to export energy by 1990? He deals, instead, with a more pressing issue. What will Soviet planners "choose" to do in the face of rising costs for increments to their energy supplies?

According to the editor, "It is unlikely that major economic reforms will emerge in the Soviet Union until some time after the current leadership transition is completed."

Even after the new leadership has consolidated its power, it will take time to establish a consensus for reform and still more time to introduce it. In short, it is unlikely that "the Soviet Union will manage reforms much before the end of the 1980s."

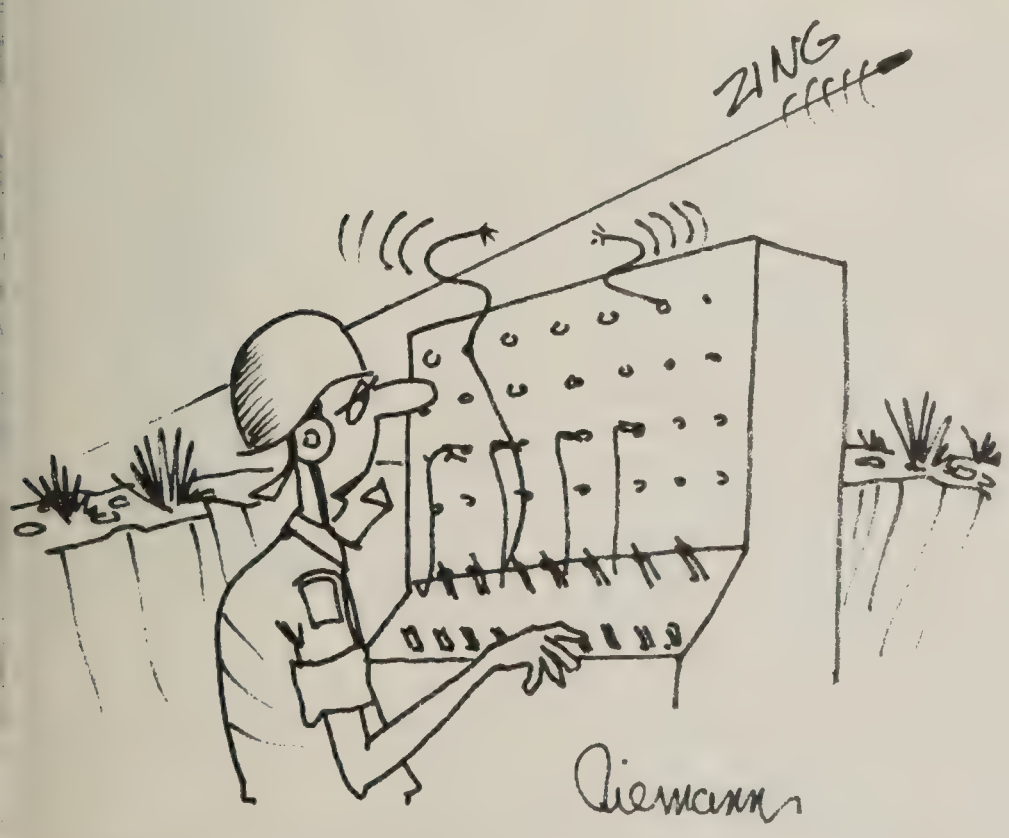
Mr. Hewett writes that, given the complicated set of policy alternatives available to Soviet leaders with which to respond to the rapidly rising costs of energy, it is not a simple matter for an outsider to divine what they will do.

Nevertheless, it is important to attempt to project the course that they are likely to take, because such actions will inevitably have political and economic consequences not only for the Soviet Union but for Eastern Europe and East-West relations as well.

The current Soviet economic system is structured basically the way it was by Stalin 50 years ago. Although Soviet leaders have "tinkered with the system" in order to deal with problems, the fundamentals of the system remain untouched. Mr. Hewett argues that "anyone who looks at the well-honed Soviet ability to muddle through and concludes that because they did it before they can do it again is ignoring the fact that, for the Soviet economy, and particularly for its energy section, the future will be far more difficult than the past."

This is a scholarly, well-written book that will appeal to the specialist. Extensive footnotes, tables and figures provide invaluable source data.

COL. JAMES B. MOTLEY, U.S. Army, retired, Ph.D., is a member of the professional staff of the National Institute for Public Policy, Fairfax, Va.



"Sorry, Lavender Lace Fiver, that line's been disconnected."

Varied Fare

The British Infantry 1660–1945: The Evolution of a Fighting Force. *Frederick Myatt. Blandford Press, distributed by Sterling Publishing Co., Two Park Ave., New York, N.Y. 10016. 227 pages; bibliography; index; $12.95.*

The author chronicles the history of the British Infantry, from the earliest days of Britain's first professional standing army during the English civil war to the last great campaigns of World War II, not as a collection of famous fighting regiments but as a single arm of that nation's defense. The influences of armament, organization and tactics are all explored in this tightly written book.

The Crisis in Latin America: Strategic, Economic and Political Dimensions. *Mark Falcoff, Joseph Grunwald and Howard J. Wiarda. Foreword by Sen. Nancy L. Kassebaum. American Enterprise Institute for Public Policy Research, 1150 17th St., N.W., Washington, D.C. 20036. 32 pages; notes; no price given.*

The "growing crisis in U.S.–Latin American relations" is examined from three different perspectives by the authors, all of whom are scholars of distinction.

Yank: The Story of World War II as Written by the Soldiers. *Staff of* Yank, *the Army weekly, eds. Foreword by Franklin S. Fosberg. Greenwich House, distributed by Crown Publishers Inc., One Park Ave., New York, N.Y. 10016. 264 pages; illustrations; photographs; no price given.*

As its title infers, this oral history of World War II presents an honest and uncensored account of the American GI experience through a series of stories told by the sergeants and privates who were there. Among the contributors are William Saroyan, Irwin Shaw, Richard Armour, Merle Miller and Andrew A. Rooney. A 23-page facsimile edition of *Yank* and more than 150 black-and-white photographs help bring the soldiers' stories to life.

Patton: A History of the American Main Battle Tank, Volume I. *R. P. Hunnicutt. Foreword by Gen. Donn A. Starry, U.S. Army, retired. Presidio Press, 31 Pamaron Way, Novato, Calif. 94947. 464 pages; photographs; illustrations; appendixes; bibliography; index; $55.*

Together with the author's earlier books on the Pershing- and Sherman-series tanks, this large, richly illustrated volume constitutes a thorough development and production history of U.S. medium and main battle tanks from early World War II up to the introduction of the M1 Abrams. The present volume covers the M46, M47, M48 and M60 tanks as well as special-purpose vehicles using the same chassis or chassis components. Among the latter are recovery and engineer vehicles, flame-thrower tanks, vehicle-launched bridges, self-propelled guns and antiaircraft vehicles, including the Sergeant York 40-mm gun system.

There are also chapters on flotation and fording devices, mine clearance equipment, training devices and special test equipment.

The book concentrates on development, so operational history is outlined only to the extent needed to illuminate the way in which field experience influenced subsequent design and modification. Likewise, foreign use of these tanks is discussed only in the context of U.S. development. The technical exposition is aided by hundreds of detailed photographs and line drawings. The experimental tanks of the era, such as the T95 and MBT-70/XM803, enter the picture primarily as they affected the main lines of development. A subsequent volume is planned that will treat these in more detail, along with further modification of the M60 series, which will remain in Army service for years.



Weapons of the Falklands Conflict. *Bryan Perrett. Blandford Press, distributed by Sterling Publishing Co., Two Park Ave., New York, N.Y. 10016. 152 pages; illustrations; index; $9.95 hardcover, $6.95 paper.*

This concisely written book analyzes the strengths, weaknesses, successes and failures of a variety of sophisticated military hardware which had been untested in combat before the Falklands conflict. The author served for many years in the British Royal Armoured Corps and has produced dozens of books on various aspects of mechanized warfare.

Hitler's Fortress Cherbourg: The Conquest of a Bastion. *William B. Breuer. Stein and Day, Scarborough House, Briarcliff Manor, N.Y. 10510. 274 pages; photographs; appendixes; bibliography; index; $18.95.*

"The commander of Fortress Cherbourg swore to [Adolf] Hitler that he would defend that channel port to the last man and the last bullet. If he succeeded, the Allied invasion of Normandy would be smashed. This is the . . . story of the bloody battle for one of the most heavily fortified bastions in the world."

Foulois and the U.S. Army Air Corps, 1931–1935. *John F. Shiner. Office of Air Force History, U.S. Air Force, Washington, D.C. Distributed by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. 346 pages; photographs; tables; glossary; notes; bibliography; index; $13.*

This volume in the Air Force *General Histories* series examines the development of the Army Air Corps during the early 1930s from the viewpoint of its then-chief, Maj. Gen. Benjamin D. Foulois, a crusty military aviation pioneer and outspoken advocate of independent air power. Neither a biography Gen. Foulois nor a formal institutional histo the book nevertheless combines elements both to explain an inherent paradox: althou the Air Corps chief retired in bitterness a controversy, the branch made rapid stri during his tenure.

In 1931, the small, ill-equipped Air Co had progressed only marginally beyond World War I beginnings, having no coher doctrine and no mission independent of ground forces. Four years later, the pict had changed entirely—the doctrine of the st tegic air offensive had been established, an dependent operational headquarters came i being and prototypes of the B-17 heavy bor er were flying. Lt. Col. Shiner, formerly member of the history faculty at the Air Fo Academy, shows how Gen. Foulois deser much of the credit, despite his spotty rec as an administrator, congressional attacks his integrity, his unpopularity with the W Department General Staff and his contro sial role in the Air Corps's disastrous attem to carry the mails in 1934.

The American Role in Vietnam and East A Between Two Revolutions. *Henry J. Ken Foreword by Hon. Mike Mansfield. Prae Publishers, 521 Fifth Ave., New York, N 10175. 192 pages; tables; figures; notes; b liography; index; $26.95.*

The author, a Vietnam veteran and ser foreign affairs officer with the U.S. Ar Control and Disarmament Agency, stud "the Vietnam experience in the perspective events taking place in the Far East during postwar era and relates the unfolding scen future American influence in the world," p ticularly Asia. He also discusses "the trem dous . . . changes that took place on the l er East Asian scene . . . during and after Vietnam war" and "how the shock of defe has affected the United States.

The Defense Reform Debate: Issues and A ysis. *Lt. Col. Asa A. Clark IV, Maj. P W. Chiarelli, Maj. Jeffrey S. McKitrick Maj. James W. Reed, eds. The Johns H kins University Press, Baltimore, Md. 21 370 pages; index; no price given.*

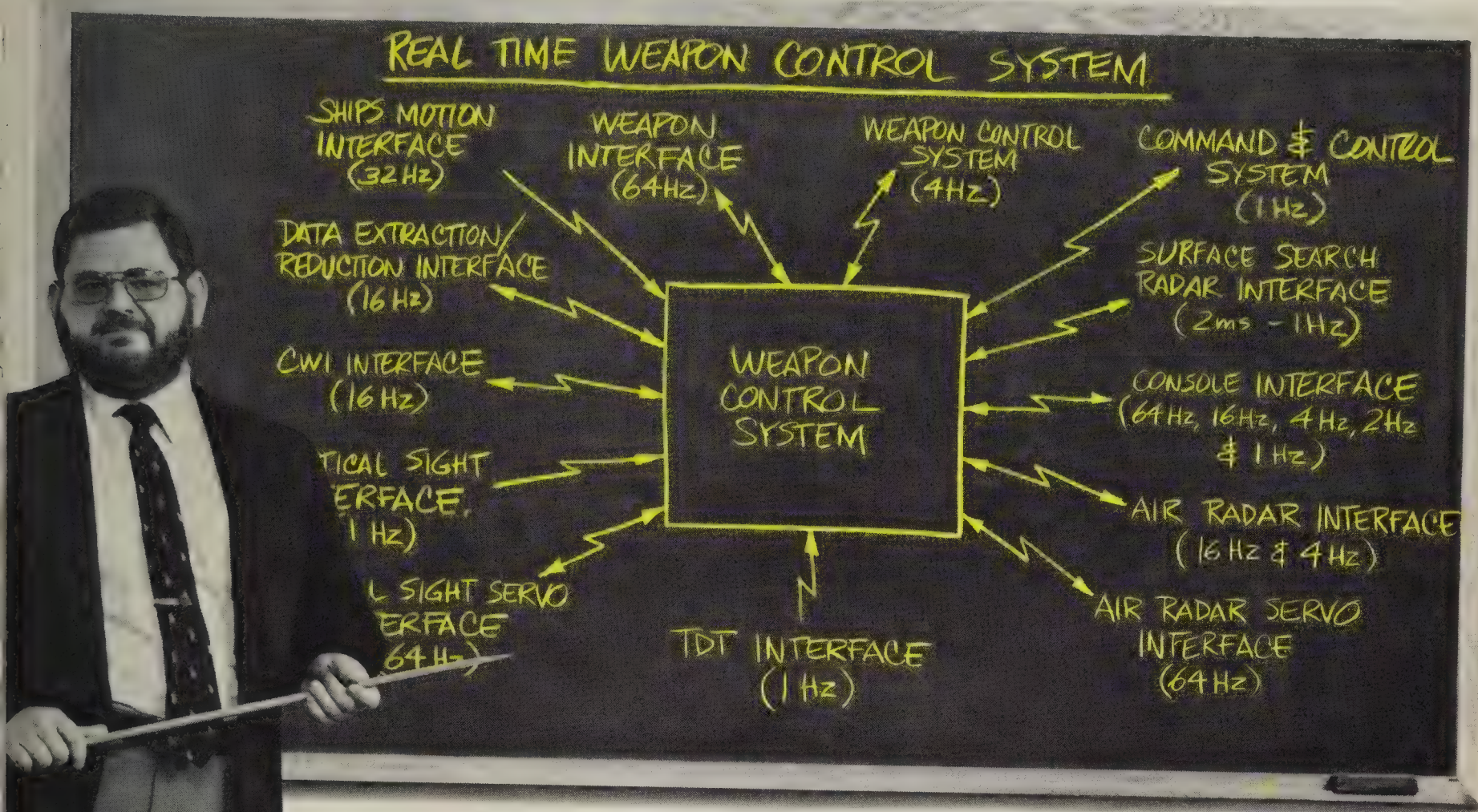
A collection of essays, critiques and rec mendations on military reform, this stimula anthology grew out of the 1982 West P Senior Conference, an informal annual se nar on subjects of significant national secu concern. It offers proposals and alternat on strategy, doctrine, force structure, mod ization, weapons acquisition and the organ tion of defense policymaking. Contributors clude former Defense Department offic scholars, members of Congress and senior itary officers.

Global Policy, Challenge of the 80s. *Mor A. Kaplan, ed. Washington Institute Values in Public Policy Inc., 1333 N Hampshire Ave., N.W., Suite 910, Wash ton, D.C. 20036. 281 pages; maps; tab notes; index; $27.95 hardcover, $9.95 pa*

This wide-ranging collection of papers well-known contributors focuses on the Rea Administration's policies in Europe, Middle East and China. Policy options discussed as well as the President's views religion.

Innovation

Art Edmondson on advances in real-time software technology.



"Computers used in military systems and time-critical non-military applications such as air traffic control put real-time software to the ultimate test," says Art Edmondson, Software Engineering Supervisor for Lockheed Electronics Company.

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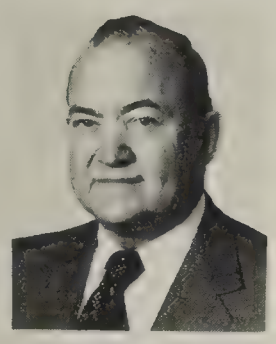
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AUSA in Action

Bernstein, Clarke, Bainbridge Elected to Council of Trustees

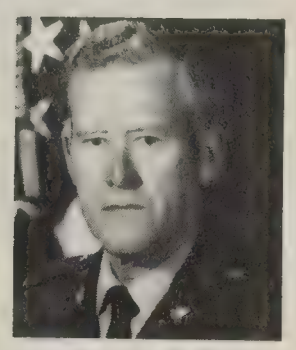
Maj. Gen. Robert nstein, USA, Ret., Maj. Gen. Mary Clarke, USA, Ret., e been elected to ve their first three- r terms as mem- s of the Associa- s Council of Trust-



R. Bernstein



M. E. Clarke



W. G. Bainbridge

lso, SMA William Bainbridge, USA, , has been elected to serve his second hree-year term. SMA Bainbridge was first ointed to AUSA's governing body in 1981 l the unexpired term of a former trustee. terms for all three council members be- on 1 July, 1985.

en. Clarke began her Army career as an sted woman and rose through the ranks ecome the first woman to command a r military installation when she was as- ed to command the then-U.S. Army Mil- Police School/Training Center and Ft. lellan, Ala.

en. Clarke was also the director of the nen's Army Corps, until it was disestab- d, and served as director of the Hu- Resources Development Office, Deputy f of Staff for Personnel, Department of Army.

ne is the recipient of an honorary degree octor of military science from Norwich ersity and the Toastmaster International munications and Leadership award. Gen. ke is also a member of the board of di- rs of the United Services Automobile ciation and the Defense Advisory Com- e on Women in the Services.

e resides in Jacksonville, Ala., and is a ber of AUSA's Gallant Pelham Chapter. e former commander of Walter Reed Medical Center and the current com- oner of the Texas Department of Health stin, Tex., Gen. Bernstein is a graduate nderbilt University and earned his med- legree from the University of Louisville. n. Bernstein served in medical assign- s in the United States, Europe, Korea, anal Zone and Vietnam. He also served mmander, U.S. Army Medical Research Development Command, and assistant on general for research and develop- .

is a graduate of the Medical Field Ser- School, the Airborne School, the Com- l and General Staff College and the Army War College. Gen. Bernstein is a ber of the Association's Texas Capital ter.

A Bainbridge served as sergeant major of the Army from July 1975 to July 1979. He is currently the secretary of the board of commissioners of the Soldiers' and Airmen's Home in Washington, D.C.

Before his service on the council, he was a member of the Association's Advisory Board of Directors. During his military career, SMA Bainbridge served in Europe and Vietnam, where he was sergeant major of the 1st Battalion, 28th Infantry. He was also command sergeant major at Ft. Benning, Ga., First U.S. Army, U.S. Army Pacific, and the Sergeants Major Academy at Ft. Bliss, Tex. As a member of the Council of Trustees, he has served as council member on the Advisory Board of Director's Retiree Affairs Committee. He is a member of the Association's George Washington Chapter.

As in previous years, the Nominating Committee made its selection after carefully considering proposals submitted by AUSA members, chapters, regions, the Advisory Board of Directors and the Council of Trustees.

The members of the slate proposed by the 1985 Nominating Committee and published in the January issue of ARMY magazine were duly elected since no additional valid petitions were received at national headquarters.

Members of the Nominating Committee include Alfred G. Cinelli, chairman; Gen. William E. DePuy, USA, Ret.; and Leonard M. Horner.

Service Members Well Educated

Speaker Cites Quality of Today's Troops

According to Brig. Gen. Wilma L. Vaught, USAF, the commander of the U.S. Military Entrance Processing Command in Chicago, Ill., "We are getting the best-qualified people in the armed services in the history of our nation."

In her address to AUSA's Topeka Chapter, Gen. Vaught also stated that, "Educationally, today's recruits are better equipped than those of just four years ago." She noted that in 1980, 68 percent of the new recruits were high school graduates, compared to 93 percent of the 1984 recruits. This 25-percent increase in diploma graduates, as well as college educational incentives provided through the military, has resulted in better-educated service members.

Gen. Vaught, who directs members from all branches of the military as they determine the qualifications of applicants for duty, is encouraged by the number of young people who desire an education and exhibit a renewed patriotism.

2ND LT. JANE GISH



Topeka Chapter. *Brig. Gen. Wilma L. Vaught, USAF, receives a memento from Maj. Gen. Ralph T. Tice, Kansas adjutant general. Gen. Vaught spoke at a Topeka Chapter luncheon meeting.*

★ STAR CHAPTERS ★

Chapters that reach their aggregate membership targets are classified as Star Chapters and will retain that status until they fail to reach any subsequent membership goal. The following chapters have achieved Star Chapter status. Chapters annotated with an asterisk have attained their semiannual goal based on the 30 June, 1985, membership targets and the end-February 1985 membership statistics. Those chapters without asterisks achieved their Star Status based on the 31 December, 1984, membership goals.

* Alaska (Anchorage)
* Ark–O–Tex (Texarkana, Tex.)
* Bavarian Alpine (Munich, Ger.)
Bluegrass (Lexington, Ky.)
Blue Mountain (Harrisburg, Pa.)
* Braxton Bragg (Ft. Bragg, N.C.)
Captain Shreve (Shreveport, La.)
Central Texas–Ft. Hood (Killeen)
Cincinnati (Ohio)
Connecticut (Norwalk)
Denver Centennial (Colo.)
Des Moines Freedom (Iowa)
Dix (Ft. Dix, N.J.)
Douglas MacArthur (Norfolk, Va.)
Fairfax–Lee (Ft. Belvoir, Va.)
Florida Gulf Stream (Miami)
Ft. Jackson–Palmetto State (Columbia, S.C.)
* Ft. Monmouth (N.J.)
Fort Pitt (Pittsburgh, Pa.)
Fort Worth (Tex.)
Gallant Pelham (Ft. McClellan, Ala.)
GA Omar N. Bradley (Ft. Bliss, Tex.)
* Gen. Creighton W. Abrams (Frankfurt, Ger.)
Gen. Joseph W. Stilwell (Ft. Ord, Calif.)
Gen. W. C. Westmoreland (Reno, Nev.)
George Washington (Washington, D.C.)
* Greater Augusta–Ft. Gordon (Ga.)
Greater Los Angeles (Calif.)
Hawaii (Honolulu)
Henry Leavenworth (Ft. Leavenworth, Kan.)
Indiana (Ft. Benjamin Harrison)
Korea (Seoul)
Leonidas Polk (Ft. Polk, La.)
Long Island (N.Y.)
Magnolia (Jackson, Miss.)
Maine (Saco)
MG William F. Dean (Oakland, Calif.)
MG Henry G. Sharpe (Lathrop, Calif.)
* Marne–Franconia (Wurzburg, Ger.)
Massachusetts Bay (Boston)
Mid-America (Wichita, Kan.)
* Mid-Palatinate (Kaiserslautern, Ger.)
Mother Lode (Sacramento, Calif.)
New Orleans (La.)
New River Valley (Radford, Va.)
Norddeutschland (Bremerhaven, Ger.)
Pikes Peak (Ft. Carson, Colo.)
* Polar Bear (Fairbanks, Alaska)
Robert E. Lee (Ft. Lee, Va.)
San Bernardino–High Desert (Barstow, Calif.)
* San Diego (Calif.)
San Jacinto (Houston, Tex.)
Southeastern Oklahoma (McAlester)
* Southern Arizona (Ft. Huachuca)
* Southern New Mexico (Las Cruces)
Spearhead (Frankfurt, Ger.)
Sunshine (Orlando, Fla.)
Tacoma–Ft. Lewis–Olympia (Wash.)
Texas Capital Area (Austin)
West Point Area (West Point, N.Y.)
Wright Brothers (Dayton, Ohio)
* Yorktown (Zweibrücken, Ger.)



Berlin Chapter. *SMA Glen E. Morrell presents a chapter soldier scholarship for $200 to Sp.4 Patrick W. Miller, 4th Battalion, 502nd Infantry, Berlin Brigade, during a general membership meeting at which SMA Morrell spoke.*

Los Angeles Chapter To Sponsor Seminar

"Emerging Army Requirements" will be the theme of a seminar sponsored by AUSA's Greater Los Angeles Chapter at the Los Angeles Marriott Hotel on 6–7 June. The seminar will include presentations by a panel of military and government officials who will discuss emerging Army requirements for the next decade and beyond.

Gen. William R. Richardson, commanding general, U.S. Army Training and Doctrine Command (TRADOC), will deliver the keynote address entitled, "Future Trends in User Requirements" on the first day of the seminar. TRADOC center commanders will then discuss future requirements for infantry, armor, aviation, artillery, air defense and intelligence.

Also scheduled to speak are: Gen. Robert W. Sennewald, commanding general, U.S. Army Materiel Command; Maj. Gen. Eugene Fox, commander, Ballistic Missile Defense Systems Command; and Maj. Gen. Burton D. Patrick, chief, Legislative Liaison, Department of the Army.

For further information, contact: General Dynamics Pomona Division, P.O. Box 2507, Pomona, Calif. 91769; Attention: Grace Gebbie, Mail Zone 1–42; Telephone: (714)620-7511. Attendance will be limited to the first 225 registrants.

Region Meetings Scheduled for 1985

Region	Dates–Host Chapter	Contacts	Telephone
First	11–13 April, 1985	Donald Amoruso, Region President	(203)852-4924
	Dix (N.J.)	Leo Norton, Chapter President	(609)547-0721
Second	18–20 April, 1985	Donald Canaday, Region President	(317)251-5499
	Tennessee–Kentucky (Ky.)	Ray Thompson, Chapter President	(615)648-3330
Third	30 May–1 June, 1985	Joseph R. Rogers, Region President	(404)796-4126
	Braxton Bragg (N.C.)	Bobby Suggs, Chapter President	(919)323-5281
Fourth	24–26 April, 1985	Harold Schnorrenberg, Region President	(817)865-2218
	GA Omar N. Bradley (Tex.)	F. Randolph Young, Chapter President	(915)755-7604
Fifth	16–18 May, 1985	Marvin D. Fuller, Region President	(913)762-2547
	Twin Cities (Minn.)	Raymond H. Lunde, Chapter President	(612)725-5203
Sixth	9–11 May, 1985	Kirby P. Low, Region President	(408)375-3681
	Seattle (Wash.)	Charles Palmer, Chapter President	(206)763-5249
Seventh	2–4 May, 1985	Berwyn Fragner, Region President	(213)536-4444
	Greater LA (Calif.)	Lawrence A. Kaufman, Chapter President	(818)886-2211
European Department	14–17 April, 1985	Maj. Gen. A. S. Cannon Jr., Region President	(002)652-7769
	Old Ironsides (Ger.)	Maj. Gen. Isaac D. Smith, Chapter President	

Around the Chapters



rea Chapter. *Sol-ier of the Quarter Sp.4 Paul Melnyk, n Medical Supply, Operations and Maintenance, re-ceives an AUSA–Korea Chapter laque from Eighth . Army CSM Lar-Hampton, chapter awards chairman.*





Francisco Chapter. *Maj. Gen. Robert Holmes, USAR, commander of the 91st Di-on (Training), and chapter president, joins soldiers at a meeting held in their honor he Presidio. Sgt. William A. Barnello Jr.* (left), *Co.D, 864th Engineer Battalion, is sidio soldier of the year. Standing to his left are Sp.5 Rolando Pedraja, Sgt. Samuel Jackson and Sp.4 Todd Compau, Letterman Army Medical Center soldiers of the nth. To the right of Gen. Holmes is Sp.4 Vici Y. Guzman of the Presidio Law Enforce-nt Co., Presidio soldier of the month. In the back row, joining the awardees, are versity of San Francisco ROTC Cadets Peter Schaeffer and William Hager.*



Coastal Empire Chapter. *Dayne Thom-as demonstrates karate skills to Sgt. Keith Jenkins during the chapter's meet-ing, which honored Ft. Stewart and Hunter Army Airfield soldiers.*

Ft. Monmouth Chapter. *Lt. Gen. William K. Harrison Jr., USA, Ret.* (center), *meets with Maj. Gen. Paul A. Feyereisen, USA, Ret.* (left), *chapter president, and Col. Frederick W. Eisele, chairman of the Ft. Monmouth military ball. The chapter arranged for Gen. Harrison to attend the ball, which commemorated the 40th anniversary of the liberation of Europe. He spoke of his role as com-mander of the 30th Infantry Division dur-ing the Normandy invasion and subse-quent World War II battles.*

Chapter Notes

Puerto Rico Chapter. Maj. Gen. Joseph L. Fant III, deputy commander, Second U.S. Army, spoke about the communist threat at a chapter luncheon held at the Ft. Buchanan Community Center.

Maj. Gen. Henry G. Sharpe Chapter. AUSA Senior Associate Lt. Gen. Richard G. Trefry, USA, Ret., discussed AUSA's goals and accomplishments while addressing a chapter dinner meeting. Also in attendance was Kirby Low, AUSA Sixth Region president.

Wisconsin Chapter. Lt. Col. Jonathan Frederick, a professor of military science at Marquette University, discussed the university's ROTC program at a chapter "education night." In addition to chapter members, 20 cadets also were in attendance.

Cincinnati Chapter. George Hofma[illegible] torian, lecturer and author, spoke at a chap-ter luncheon about the intelligence gather-ing capability of the Soviet Union.

Gulf Stream Chapter. The commanding general of the 81st Army Reserve Command,

ASSOCIATION OF THE U.S. ARMY

AIMS AND OBJECTIVES

THE ASSOCIATION OF THE U.S. ARMY shall be an organization wherein all who are in accord with its objectives may join in the exchanging of ideas and information on military matters, and in fostering, supporting and advocating the legitimate and proper role of the Army of the United States and all of its branches and components in providing for and assuring the nation's military security.

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***Staff Coordinator

Maj. Gen. Robert Jones, USAR, discus the mission of his command. Gen. Jo spoke at a dinner meeting, where he presented the Legion of Merit to Col. S ford B. Morton Jr.

Fort Pitt Chapter. Hon. Jay R. Sculley, sistant secretary of the Army (Research, velopment and Acquisition), was guest sp er at a chapter luncheon held at the Wil Penn Hotel and cosponsored by the P burgh, Pa., High Technology Council.

Coastal Empire Chapter. Approxima 1,000 Ft. Stewart and Hunter Army Airf soldiers attended the chapter's Super B Sunday, which was held in the 124th Mili Intelligence Battalion dining facility. G television screens, drinks and snacks w provided by the chapter. Door prizes w donated by chapter corporate members

New River Valley Chapter. The 82nd borne Division's operations officer in Gre da, Col. Stephen Silvasy, addressed chapter on the operation.

New York–Col. Joseph Markle Chap Maj. Gen. Thomas W. Kelly, command general, Ft. Dix, gave those attendin chapter luncheon a briefing on Ft. Dix's rent mission.

Wolverine Chapter. The assistant secre of the Army (Research, Development Acquisition), Hon. Jay R. Sculley, discus the Army's current research and deve ment trends while speaking at a chapter ner held in Grand Rapids, Mich.

AUSA–ROTC Company Note

Lamar Company (Lamar University). C James Peterson gave a presentation on military life-style at a company meeting

VPI Company (Virginia Polytechnic In tute and State University). Col. Step Silvasy, commander, 2nd Brigade, 82nd borne Division, discussed the Army in nada with cadets and guests at a comp meeting.

Kansas State Company. Company m bers collected canned food which was do ed to the Breadbasket, a relief agency, distribution to the needy.

The company also sponsored a collec to "Save Our Lady." Funds were sent to foundation sponsoring the refurbishmen the Statue of Liberty.

Citadel Company. More than 400 memb and guests heard the 82nd Airborne Divi Chorus perform on campus. The event sponsored and hosted by the AUSA comp

The company also heard from Lt. G Jack Mackmull, USA, Ret., former 18th borne Corps commander, who discus the Army's mission in Grenada.

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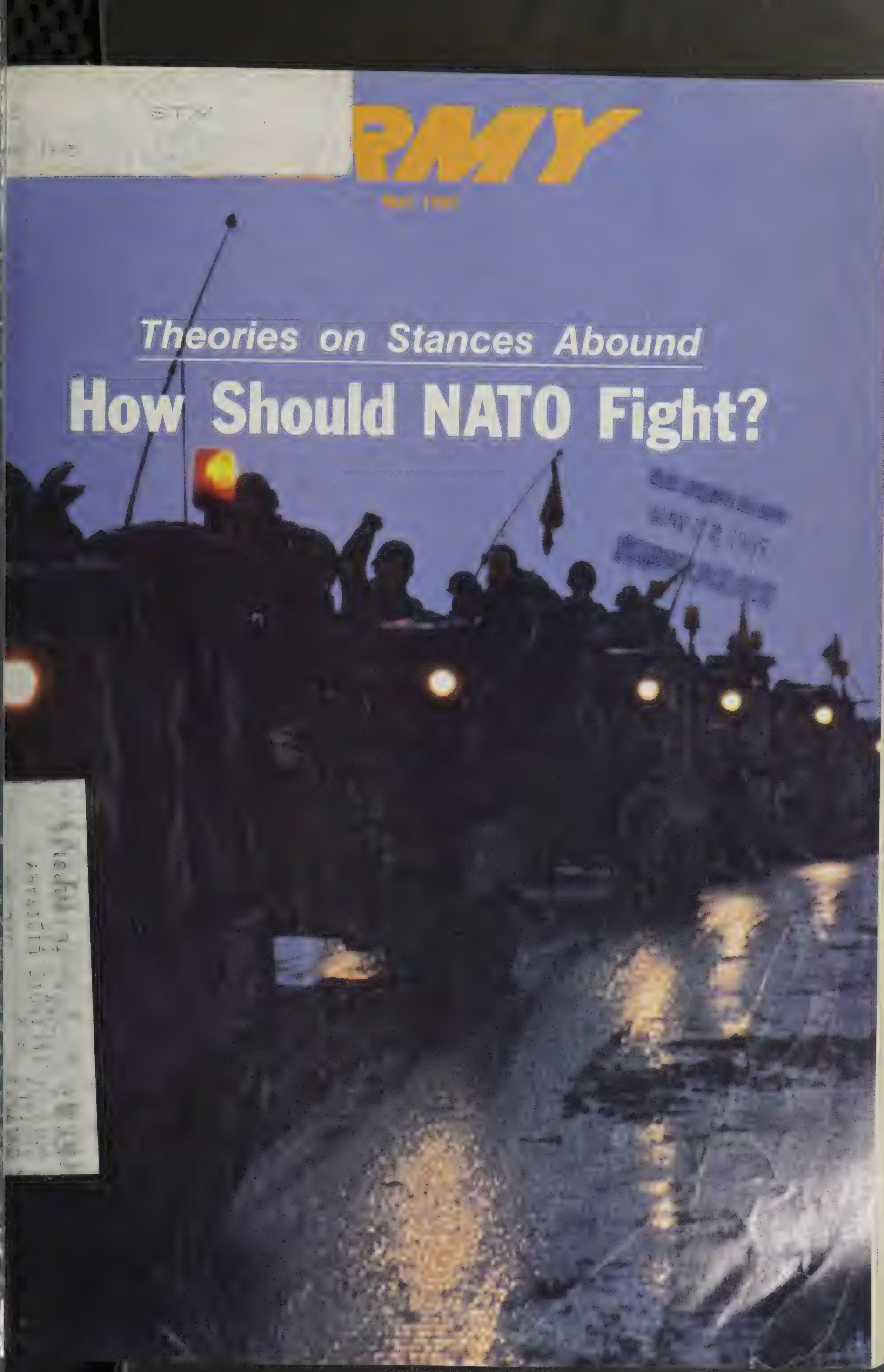
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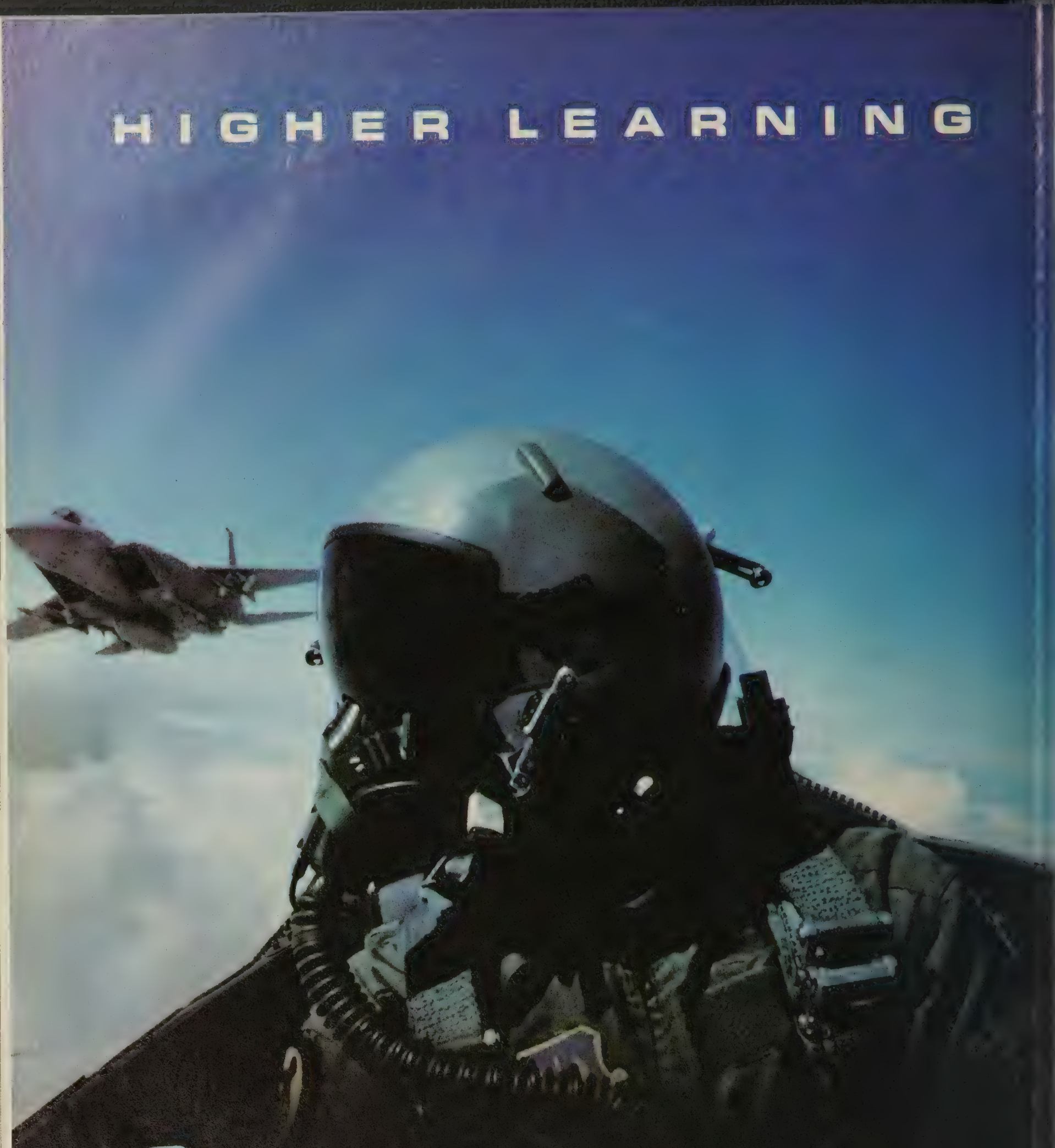
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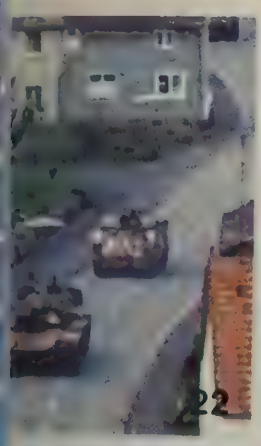


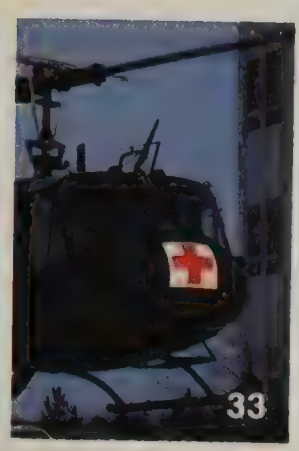
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ARMY
The Magazine of Landpower

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One of the Signal Companies

Reader Lauds Significance of Operational Art Article

■ Col. L. D. Holder's "A New Day
- Operational Art" (March) is an im-
rtant contribution and is long over-
e. His writing focuses on the steady
›sion of quality U.S. military thought
d philosophy since World War II.
We now train our uniformed leaders to
skilled technicians. An all-embracing
reaucracy has grown up bringing me-
›crity and orthodoxy to military plans
d operations. The payoff for promo-
n and advancement has been and is
lay mastering the process rather than

Letters

derstanding the substance and impact
military strategy.
The ability to participate in, manipu-
and protect the massive defense or-
izational structure has become a para-
unt virtue. Uniformity of thought and
formity of action are more praise-
rthy than innovation and daring.
To clearly understand the present void,
npare the vision, imagination and grasp
pre-World War II "Rainbow" plans
h the current tedious annual interac-
ıs of utopianism that characterize the
ıt strategic objectives plan. Where are
modern day Marshalls and MacAr-
rs, able to devise global strategy and
ly it? What present day Pentagon
ıner would seriously consider a stroke
›old as the Inchon landing, a crossing
he Great Bitter Lake or a landing in
Falklands half a world away?
he system does not permit deviation
n the norm and rejects automatically
heresy of risk. Col. Holder's words
classic, "Process does not guarantee
ent . . . the substance behind the form
ıfamiliar to too many Army officers."
he committee solution of consensus
become the norm in any complex
military operation and involves all
ıcies without any clearly defined lead-
Jnity of command is no longer truly
ticed at any level in the hierarchy.
ıuse of this lack of central direction
ıs become impossible to assess blame
raise for failure or success.
ıe Iranian hostage extraction and the
sion of Grenada are cases in point.
ımand and control have become as
dled as the planning process. The
operation in ten years of U.S. in-
ement in South Vietnam that showed
grasp of operational art was the Cam-
an invasion. It was conceived, de-
ed and directed by the White House
›nal security advisor.
ck of vision, lack of depth of knowl-



edge, a cumbersome structure and no central direction stymie speed in the decision-making process and spawn proliferating subordinate commands. The results are forces unable to react in a timely, responsive manner; voluminous complicated plans; and a lack of flexibility in thought and execution.

U.S. forces have long been considered well ahead of the Warsaw Pact in initiative and the ability to rapidly modify plans. Is this still true? A strategy of avoiding risk in favor of bureaucratic compromise has left the United States holding the bag in two limited wars.

Col. Holder's optimism for the future is unwarranted. The last two retired chairmen of the Joint Chiefs of Staff have called for a unified command system without result. No Army school encourages officers to study military art after leaving the Reserve Officers' Training Corps or the U.S. Military Academy. Today the defense establishment would reject mavericks like Gen. George S. Patton Jr. or Adm. William F. Halsey Jr.

Nearly two generations have passed since emphasis was properly placed on the broad educational needs of a professional military officer. We continue to triumph the process and the committee solution.

Only fundamental and far-reaching reform of the Army school system, the Army promotion system and the U.S. military command structure will rejuvenate the stolid, plodding organization that has been created. The inspiration of the past lingers on but has no avenue of expression.

COL. FRANK G. WALTON
U.S. Army, retired
Egg Harbor City, N.J.

True Mission

■ In his article "Are Our Light Divisions Too Light?" (February), Edwin W. Besch has made a good case for a family of light armored vehicles (LAVs) in the armies of the Soviet Union and their Third World surrogates, our allies and even the Marine Corps. However, he has apparently misunderstood the intended missions of the light infantry division and hence its design and concept of employment. Rapid deployability and low-intensity conflict are the key elements.

The Soviets' need for rapidly deployable forces is mitigated by several factors. The Soviet Union focuses its army as well as those of its Warsaw Pact allies on the Eurasian landmass. For intervention in other contingency areas, the Soviets have demonstrated a preference for the use of surrogate forces. The Soviets and their surrogates, as the probable transgressors, pick the time and place, and thereby retain the advantage of a relatively deliberate deployment.

The armies of our allies also plan to fight close to their own backyards. The Marine Corps is not as constrained by equivalent sortie requirements (deployed primarily by surface shipping) and sometimes must make a hostile entry into a mid- to high-intensity environment.

The United States has accepted global responsibilities. The Army will be called to deploy to distant trouble spots to reinforce our forward deployed forces and allies in NATO or in Korea, or as has become increasingly likely, to respond to contingencies characterized by low-intensity conflict.

We have ready a force of strong, modernized armored and mechanized divisions ideally suited to the mid- and high-intensity battlefield. The Army has acknowledged the advantages of a lighter mobile division and is evaluating several different organizations within the 9th Infantry Division (Motorized) to adapt lightly armored, agile tactical vehicles optimized for use in Southwest Asia.

Until the advent of the light infantry division, however, only the 82nd Airborne Division was light enough for truly rapid deployment and even the 82nd has a relatively heavy tail of support equipment. The light infantry division provides the needed balance at the low end of the spectrum—a rapidly deployable force that can quickly control the battlefield with large numbers of high-perform-

ing, competent, well-led infantrymen.

The light infantry division is a credible, capable force that we can deploy to a "hotspot" before the onset of actual hostilities and preclude the need for further commitment of U.S. forces. Designed primarily for low-intensity conflict, the light infantry division also has the versatility to be employed effectively in reinforcing forward deployed heavy forces.

Much of Central Europe is now urbanized; other areas are forested or mountainous. The light infantry division can be used effectively in such terrain, thereby freeing mechanized forces for the mobile, offensive missions, which are imperative in AirLand Battle doctrine.

The Army has carefully analyzed the trade-offs among strategic deployability, tactical mobility and antiarmor lethality. Technological advances in lightweight materials, kinetic and chemical energy ballistics and new concepts in logistics support have been considered.

The fact is, it cannot be both ways: a division light enough for truly rapid deployment has to trade off some tactical mobility and track-mounted, antitank firepower. A division able to outmaneuver and slug it out with modern armored forces requires a lot of strategic lift.

The light mechanized division proposed by Mr. Besch would result in a compromise no more deployable than the standard infantry division, and equipped with lightly armored vehicles that cannot survive against any of the direct fire, antitank weapons presently fielded by our potential enemies.

The light infantry division is not too light to perform the missions for which it was designed. If selected for a more demanding mission, the division can be tailored or augmented accordingly.

The Army's five light infantry divisions provide a much needed balance to the Army force structure. They give our national command authority the capability to win in major conventional warfare and the flexibility to respond quickly to a growing threat at the lower end of the spectrum of conflict.

BRIG. GEN. JOHN R. GREENWAY
Director of Force Programs
Office of the Deputy Chief
of Staff, Operations & Plans
Washington, D.C.

ARMY invites letters to the editor. The subject matter may be about material that has appeared in the magazine or about any topic which the writer feels would be of interest to **ARMY** readers. The editors reserve the right to edit letters for reasons of style, accuracy or because of space limitation. All the letters must be signed, and while we prefer to carry the writers' names we will consider requests for withholding them if there is a compelling reason to do so.

The Editors

Objective Picture

■ It was a surprise and a delight to read "Bloody Standoff in Afghanistan" by Paul L. Moorcraft in the April issue.

The objectivity of the reporting was indeed a breath of fresh air; we were treated to an unadorned account of resistance to Soviet armed might without the automatic canonization of the resisters. Let's face it, neither side is very attractive, and if one would express any sympathy at all, it should probably go to the wretched women and children, on the one hand, and the miserable Russian draftee on the other.

I hope the idiots in Washington, who haven't the wit to see through the false axiom of "mine enemy's enemy is my friend," won't be too surprised to find themselves fighting against U.S.-made equipment in the Persian Gulf soon should they decide to increase aid to the *mujahedeen* now. Let us not forget that they are blood brothers to that insane mountebank in Iran.

CAPT. JAMES MACCALL
U.S. Army, retired
Acton, Mass.

Comments on Stockman

■ David A. Stockman's jabs at the military ("Vas You Dere, David?" by Lt. James Binder, "Front & Center," March) were parried years ago by an English philosopher who wrote, "Soldiers in peacetime are like chimneys in summer."

BILL HERMAN
St. Augustine, Fla.

■ Just after David A. Stockman made his brilliant statement about cutting back military benefits, retired Col. Vernon C. Ramberg, of Alexandria, Va., wrote a letter to the editor of *The Washington Post*. It appeared on the editorial page on 14 February.

The "well-heeled" colonel proclaimed "Mr. Stockman is right." He went on to say, "I have long felt that service personnel, up and down the ranks, enjoy a wide variety of benefits that set them apart much too much as a favored sector of society."

In substance, he was saying that I was getting too much retirement pay and estimated that he had received in excess of $350,000 since he hung up his green suit 15 years ago.

Okay, Col. Ramberg, if Uncle Sam is paying you too much, may I suggest that you make substantial allotments to Army Emergency Relief, the Salvation Army, Ethiopian relief and, come to think of it, I could use a little help on an exorbitant heating bill!

COL. GLENN E. FANT
AUS, retired
Fairfax, Va.

Curbing Costs

■ I read with interest Col. Richard Stuart's article, "The Problem of Alcohol Abuse" ("Front & Center," February). He wrote that alcohol abuse costs the United States $43 billion annually and that, in an Army medical center, the "emergency room in one recent 25-day period reported 51 soldiers were seen with medical and surgical problems caused by or associated with drinking."



"Am I to understand you want the Army to help you find where it's at and where it's coming from?"

Although this is amazing, I do believe to be true and, certainly, shameful. e unmentioned cost for the free treatnt at not only this center, but all mili-y centers must be staggering.

n general, whenever a soldier wears a piece of equipment through normal that piece is simply directly exchanged a good piece. Even when a piece of ipment is inadvertently destroyed or damaged, the same process for re-cement is applied. It is only when re is obvious negligence involved that soldier is held accountable for the nage. He must then pay for the re-cement.

lthough this situation does not pres-y apply to a soldier's medical care, I eve that, in light of the cost involved cited by Col. Stuart), a similar sys-can be created. If a soldier were to ak a leg while training, for example, present system of setting the leg and ng a cast for free would apply; how-, if that leg were broken as a result drunken soldier falling down a flight tairs, I do believe that, while total lical attention would have to be ap-d, the soldier should have to pay for equipment used during his recovery. total amount of these costs could be held from the soldier's pay.

he Army not only has some alcohol-ed problems, it has some economic blems as well (as does our entire coun-Now when the Army absolutely has ay for something or for some ser-, it will. However, these silly and un-anted medical expenses have some t on the Army's budget, whether impact be large or small. This is not to the Army and, of course, it is not to the taxpayer.

st because it is the Army's responsi-to provide its soldiers prompt and uate treatment in all medical emer-ies does not mean, I believe, that its nsibility stops at that. I believe it he responsibility, both to itself and e taxpayer, to collect from the sol-all monies spent unjustifiably and to n such funds.

SGT. ERIC P. ROOS
New York 09742

cting Commanders

Up until about ten years ago, the had a very effective way of select-s battalion commanders. The branch ment officers in Washington sup-the field commander with a given ber of lieutenant colonels. From this , the field commander assigned some ff positions and others to battalion and assignments. The assignment nnel in Washington could and did recommendations for the assign-of these officers, but the final au-y rested with the field commander.



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There was a great deal of flexibility in this system. The field commander could select his own battalion commanders. He could match them up with units which he felt needed their particular talents. He could also move them about without referring the matter back to Washington.

There was a more important aspect to this system of selection. The field commander could take into consideration the particular interests and desires of the lieutenant colonels he had under his command. The aggressive officer who wanted a command could seek one. The officer who was more inclined toward staff assignments could pursue that type of duty. Officers were not stigmatized by their preference of assignments.

While some officers ended up commanding more than one battalion—perhaps one in Korea and another on a later assignment to West Germany—other officers never seemed to get around to commanding that first battalion.

This latter group of officers was in the majority. They moved from assignment to assignment, always with the possibility of commanding a battalion, but never quite making it. They held interesting staff positions, earned outstanding efficiency reports and enjoyed the same opportunity for promotion as did the group of battalion commanders. In the end, they retired as respected and honored members of their branch. Certainly, no one ever told them they could not command a battalion.

Then, in the early 1970s, the Army decided that more rigor was needed in the selection of its battalion commanders. This could best be done by centralizing the entire process. Henceforth, lieutenant colonels would be selected for battalion command by a board of senior officers sitting in Washington. This would ensure that only the best would be selected.

Once a year for the last ten years, this board has been selecting "the chosen few." Each spring, a list is published by the Department of the Army, announcing the "winners" for the forthcoming year. All battalion command assignments, Army-wide, are made from this list. No one can command a battalion who does not appear on either the primary or the alternate "battalion command list."

In effect, those lieutenant colonels whose names do not appear on the list—and they represent the vast majority of serving lieutenant colonels—are being told they cannot command a battalion. No personnel policy in the last four decades has had a more devastating effect on the morale of the Army.

Now the field commander has almost no leeway in the selection of his subordinate commanders. The lieutenant colonel who wants to command cannot do so in the majority of cases; and the lieutenant colonel who is not inclined to command often ends up commanding anyway.

Worse yet, the blow dealt to the ego of those not selected—particularly in the combat arms—is almost overwhelming. How do you tell an infantry officer, who has prepared himself all his life to command troops, that he cannot command a battalion? How do you do that without wounding him deeply? How insensitive can the Army be that it treats its most loyal personnel with such indifference?



Army officers have always had to sweat out promotion boards and school selection boards as they progress through their careers. Now they have battalion command boards and brigade command boards added to the list of hurdles they must jump. It seems that up until the day they retire they have at least one more board to worry about.

No other institution in our society keeps its members in such a perpetual state of anxiety. Certainly, none of the other services do so with the same degree of intensity. Neither does industry, business, academia or government.

The worst of it is, there is absolutely no evidence to indicate that this continued reliance on centralized selection boards results in a better Army. There is not one shred of evidence to prove that the current method of selecting battalion commanders is any better than the pre-1970 method. In fact, a strong case can be made to the contrary.

BRIG. GEN. J. MCKINLEY GIBSON
U.S. Army, retired
Alexandria, Va.

Testing the Basics

■ While a patient at the National Naval Medical Center, Bethesda, Md., I had occasion to read the December 1984 issue of ARMY, and I liked what I read. Of particular interest to me was the article by Maj. Michael L. McGee, "The Test."

It seems basic leadership and the span of control concepts are forgotten in this new age of ultrasophisticated "field" management. Officers and senior NCOs must stand back and look at the whole forest instead of one tree. Brushfire management tends to creep into use about every ten years, between wars.

It makes my heart beat faster when I read or hear of experiences such as thos described by Maj. McGee. I enjoyed hi mention of the "first shirt," 1st Sgt. Vicent "Top" Garcia. In our attention to detai we sometimes forget this dedicated corp of professionals who keep the whee turning. Sgt. Garcia is indicative of th corps.

As a retired Marine, I recall many o these awakenings in my service. Basi leadership always works. May I wis Maj. McGee "fair winds and followin seas" during the remainder of his cruis

CAPT. JOHN W. ADAMS
U.S. Marine Corps, retired
Lexington Park, Md.

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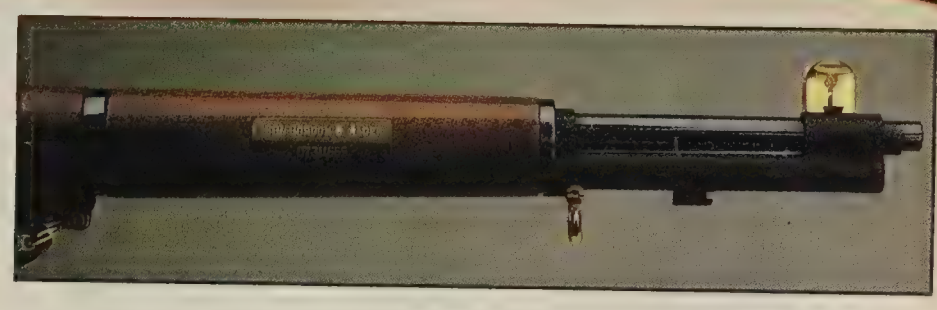
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TEXAS INSTRUMENTS

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oD Report Details Growth of Ground Forces

ed Army's Operational Concept Is Changing

eneral press coverage of the latest edition of the Defense Department's dbook, *Soviet Military Power*, has fo- ed on strategic weapons, such as the n-generation intercontinental ballistic siles now being tested, new bombers submarines, a burgeoning military ce effort and evidence of progress in tic antimissile technologies that paral- he U.S. SDI (strategic defense initia-) program.

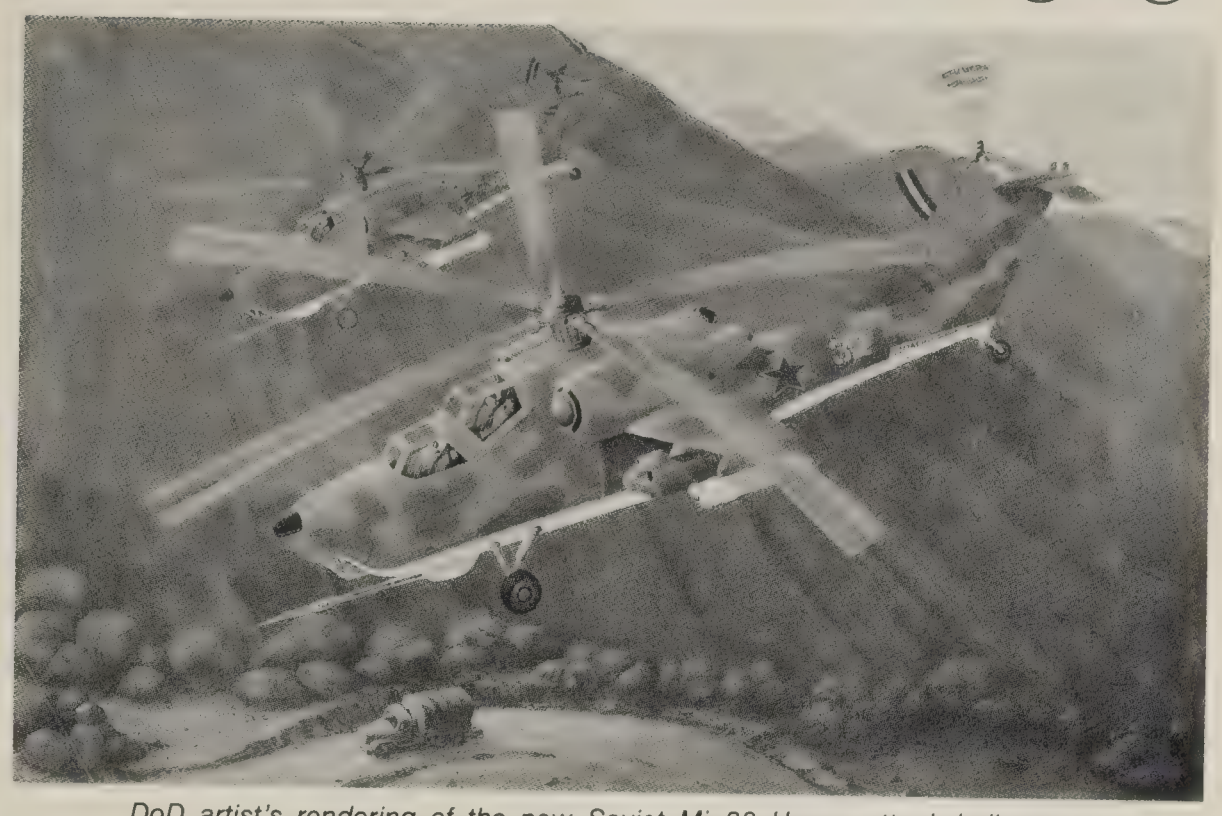
Front & Center

he bias is understandable, given the mption of U.S.–Soviet arms control otiations and the appearance of a new eration of Soviet leadership, not to tion the ever-present potential for un- gined destruction that strategic sys- s represent. Nevertheless, the 1985 on of *Soviet Military Power* has some ortant things to say about recent de- pments in the vast Red Army, points h have received rather less emphasis. terestingly, while Soviet nuclear forces most of the headlines, the report s that much of what has happened in ground forces over the past 15 years lts from abandonment of the fixed as- ption "that a conventional war would s the nuclear threshold early in a lict."

hile the Red Army is as well prepared er to fight under nuclear war condi- —and better prepared than any oth- rmy—it has developed an alternate rational concept designed to win a before the enemy can use nuclear ons." This accounts for Red Army ents opposite NATO Europe being or less poised with units in a high of readiness—28,000 tanks at hand, logistics stocks already in position 27,000 meters of bridging equipment to go.

e report makes these other points t the Soviet ground forces:

Red Army divisions now total 199 rom 194 last year and 181 in 1981), ding 140 motorized rifle divisions, nk divisions, seven airborne divi- (not counting elements deployed in anistan that could make up another) a coastal defense division. About 40 nt of these are manned at more or ull strength, including all 30 divi- in the groups of Soviet forces in rn Europe, while nearly half of the



DoD artist's rendering of the new Soviet Mi–28 Havoc attack helicopter.

total—98 divisions—is oriented toward the NATO alliance. The overall totals do not include 14 divisional mobilization bases (down from 17 in 1984), essentially unmanned sets of equipment.

■ Peacetime strength is pegged at 1.9 million, with about three million ground-force reservists who have served on active duty within the past five years.

■ Two divisions have been converted into "corps-like structures," nearly twice as large as a tank division, and "ideally suited to act as an operational maneuver group (OMG)," the Soviet force package designed for high-speed exploitation of breakthroughs. These new formations are each equipped with more than 450 tanks, about 600 infantry fighting vehicles and carriers, and 300 guns and multiple rocket launchers.

■ More logistic structure is being pushed down to lower tactical levels, contrary to the traditional pattern in which Soviet divisions were designed for initial shock power rather than sustained combat. Divisions now have their own materiel support battalions, and support brigades are being formed at army and front levels, combining transport and logistics under a single commander.

■ T–80 and some T–64 main battle tanks are equipped to fire guided antitank missiles through their 125-mm main guns. A variant of the T–64 with a gun-launcher similar to the U.S. Shillelagh system (the T–64B) was identified some years ago, but this capability had not previously been ascribed to the T–80, a late production version of the more numerous T–72. All three tanks (except the very earliest T–64s) mount the same gun, so the capability must lie in fitting the fire control equipment, although the type of guidance is not specified.

The interesting question is why the Soviets have taken what would be regarded as a retrogressive step in Western armies. Either they have developed guidance superior to that of earlier Western systems, or the Red Army is dissatisfied with the long-range performance of the Rapira 3 smoothbore gun. Weapons of this type sometimes exhibit loss of velocity and accuracy at medium to long ranges, but a modern missile could double even the standard effective range—at the price of a slower rate of fire.

■ The new attack helicopter, the Mi–28 Havoc, is in production and is expected to go to the field shortly. Except for a five-bladed rotor, a Department of Defense artist's rendition has the Mi–28 looking remarkably like the Army's new AH–64A Apache, and the performance is said to be similar.

■ A new small, high-performance helicopter (NATO code name: "Hokum") is being developed for air-to-air fighting in the low-altitude rotorcraft operational regime. It is about the size of the Apache and is expected to have a top speed of about 350 kilometers per hour and a combat radius of 250 kilometers per hour.

■ Soviet research programs have developed the high-power (15-megawatt class) pulsed generators needed to make antipersonnel and air-defense laser weapons a reality, and such systems could be fielded by the end of this decade.

ECL□

A Responsibility for Truthfulness

Holding the Media Accountable

By Col. Harold J. Meyer
U.S. Army, retired

In a recent article published in ARMY (February), a former chief of Army information wrote at length on the current and widening rift that separates the professional soldier from the members of the press.

The author, Maj. Gen. Winant Sidle, U.S. Army, retired, suggests that the solution to the information problem rests, in the main, with the application of the following principles by the military leadership:

- "Accept the fact that the news media are the principal means of telling the military story to the public."
- "Rest on your accomplishments."
- "[Do] not be afraid to admit mistakes."
- "Get to know the reporters who regularly cover the command's activities."

Thoughtful consideration of the first principle causes little argument. There are no other agencies, private or government, that can do the job of the American press. Media coverage is a must, as counseled by Gen. Sidle.

However, the points from which the principle is derived are debatable. While the American public has a right to know, it has a corresponding right to be given correct, factual and honest information. Too often this right has been abused by the working press.

Consider these published untruths:

- The author of a story of an eight-year-old heroin addict, published in *The Washington Post*, was awarded a Pulitzer Prize, which was later returned, for her fiction.
- A reporter's visit to a Khmer Rouge stronghold as printed by *The New York Times* was a gross lie.
- The resignation of one reporter was accepted by the *New York Daily News* after it was discovered that he used "misleading journalistic techniques." He fleshed out his stories with half truths.

The press would, no doubt, acknowledge these as unique and rare editorial errors of judgment.

Traditionally, the press has been dedicated to informing the public. To do so, much energy and effort is spent in gathering the facts and writing the articles. In recent years, this fact-finding technique has been joined by another method. The media simply print or broadcast material stolen from the government or its agencies.

Some members of the press defend such criminal action as valid. Thus, the publication of the stolen Pentagon Papers is called to mind, as is the printing of the stolen Pike committee report on CIA activities, and the recent printing and broadcasting of the contingency plans for the wartime relocation of U.S. strategic weapons.

In short, the media's responsibility to inform the public does not carry a corresponding responsibility for truthfulness or even accountability for their information-gathering methods. What the public reads or views, too frequently, reflects the national news as it is perceived by a reporter, an editor or a chairman of the board. Patriotic sentiments or loyalty to democracy is cast aside for smug political achievements as well as profit.

Although the essence of the first Sidle principle can be accepted, it raises other matters for consideration. Gen. Sidle urges commanders to accept this principle and encourages them to ensure that their subordinates and staff officers also accept it. He further suggests that if the military story is good, then the reporter will be inclined to write a favorable story.

Gen. William C. Westmoreland, U.S. Army, retired, former commander of the Military Assistance Command, Vietnam (MACV), advanced the correct them rather pointedly when he wrote in h memoirs, "Press and television had c:ea ed an aura not of victory but of defea which, coupled with the vocal anti:wa elements, profoundly influenced timi officials in Washington."

No matter how gallant the soldier c brave the airmen, no matter how goo the story in Vietnam, the press was major influence in the defeat. The pre philosophy in Vietnam seemed to focu on the negative, no matter how succes ful MACV's efforts were.

A favorable military story will not b filed if, in the judgment of the writer, will not satisfy the requirements of h editor or publisher. This, then, leads t the second principle advanced by Ge Sidle, "Rest on your accomplishments

This proposes that emphasis be place on service accomplishments. He urg that the press be invited to see the resul of success. Application of this princip can backfire also, however.

For example, consider an Army me sergeant who has won a superior me award for several consecutive month The unit public information officer invit local television station representatives t visit the mess, thinking it is a good stor And it is good, up to the end of the 4 second broadcast allotted the sergea and his story. Concluding the piece, th narrator notes that "Army mashed pot toes are still as lumpy as they were whe I wore a uniform years ago."

This is oversimplification, but it unde scores the danger of resting on accon plishments. The mess sergeant, his un and the public affairs officer would hav been better off if the station represent tives had never visited the company.

Far too often, the military success stor as reported by the media, will end on negative note; for example, "While th post engineer did save more than $60,0 in maintenance funds this year, it appea that he will have use for them in the f ture. Every building on the post nee painting."

Or, as another example: "This succes ful engagement was a victory for the pl toon. It cost the lives of two NCOs ar one second lieutenant; to date in this co flict no senior officers have been kille Whatever happened to the motto 'Follo Me'? Does it apply only to sergeants ar lieutenants?"

The third principle urges commande to admit their mistakes. In so doing, is supposed the commander will gain cre ibility with the press. Gen. Sidle urg that the majority of mistakes made admitted immediately. He indicates th it is better to admit them before they a discovered to avoid the charge of cov up and that early admission makes th matter less newsworthy.

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The Editors

Now if the commander discovers he
; made an error, he certainly should
nit it immediately—to his superior.
t admit it immediately to the press?
at should never occur. Immediate press
ification would not have changed the
ending adverse publicity given the My
incident or any other unfavorable
itary event.

The final principle advanced by Gen.
le concerns knowing the press regu-
: who cover a particular command.
s is a sound principle—one that has
g been practiced by senior officers.
ı. Sidle demonstrated the value of the
ıciple as practiced by Gen. Creighton
Abrams. It must be noted, too, that
ıs. Frederick C. Weyand and West-
eland followed similar styles, as prac-
d in World War II by Gen. Dwight
Eisenhower.

The principle's flaw rests in the fact
it requires revelation of one's weak-
es and prejudices. How do you get a
:Arthur, a Patton or a Pershing to
ıit any weakness? In short, it is good
ness to know the members of the
s, but such a practice will neither
rantee favorable coverage nor influ-
many writers to make greater ef-
s toward objectivity and truthfulness.
en. Sidle stresses that the major over-
s for cooperation be made by the mil-
. To heal the wounds of Grenada
Vietnam, wounds caused in Vietnam
nly by the press, he solicits the Army
others to endorse the recommenda-
s of the Sidle Commission.

f course the press wants the full sup-
of the military. However, their per-
ıance over the years erodes any trust
may wish for from the services.

Frankly, every military senior officer would be well advised to be skeptical about press rectitude. Today's commanders should be cautious in dealing directly with reporters. Self- and unit protection dictate that the public affairs officer or an aide be present during interviews.

While recording the meeting is suggested, it is mandatory that some record of what is said be made. There is no code of ethics or honor system common to members of the press. They have no policing body to discipline them or critique their efforts—honest or otherwise.

The abilities of the press should not be ignored, however. They are skilled in ferreting out the elements of a story. They should not be lied to, and a commander should not attempt to be coy or evasive by camouflaging the truth. If a commander does not want to discuss a subject, he should say so. If the reporter persists, the commander should end the interview.

A commander's obligation is to his command, its mission, and to the welfare and safety of his soldiers. The loyalty of press members is to their editors and publishers, in that order, and not to the military.

One can only speculate as to whether or not the press is patriotic. This commendable characteristic should be determined by the senior officer by subscribing to Gen. Sidle's fourth principle.

In the last three conflicts of major proportion, the military approach to the press has been largely the same. The military needed the support of the public to win the war. To gain public support, the military needed the press. To win favorable coverage, the military assisted them.



Don't tell anybody I asked, but just where are the Halls of Montezuma?"

It was solicitous of their health and welfare. It accommodated them and lessened their labors so that they could give full measure of their ability to winning support and recognition for U.S. military forces. They were provided transportation, living and dining facilities, and communications outlets so they could reach their editors; and so on and so on—*ad nauseam*—especially in Vietnam.

History demonstrates armies often use, to a disadvantage, a past war's tactics and equipment. So it is with military public affairs. The military affairs approach in Vietnam was less than successful and assuredly will fail in the next war if public affairs planning reflects the techniques of the past.

Planning must incorporate a means to cope with modern broadcasting methods. It is not unreasonable to visualize a small hand-held transmitter televising a battle and sending it via satellite direct to a New York communications center for the evening news. This and other sophisticated reporting methods will be common on the future field of combat.

What if censorship prevails? How will the press be controlled when it uses advanced communications devices and systems? Planning should provide the answer.

What should the military's approach be regarding press accreditation? Before receiving accreditation, a press member would have to successfully pass a lie detector test. He should be required to undergo a standard background investigation and to attend a short defense information orientation course designed to prepare him for service in the theater of operations.

Upon arrival in the battle area, he would be required to use his publisher's or a combination of publishers' facilities for transportation, housing, dining and communications with his editor. He would pay for any emergency medical treatment, and he would be evacuated at his expense if treatment extended more than one week. Losses of personal and publisher's equipment would not be the responsibility of the U.S. government. In case of death, his body would be transported by U.S. personnel to the nearest civilian mortuary for further disposition by his press agency.

While considering these suggestions, it should be kept in mind that in Vietnam it was a radical, innovative American press that, in full measure, helped turn the tide of war—for the enemy. Future public affairs programs must hinder the press from ever doing this again. □

COL. HAROLD J. MEYER, U[illegible] retired, lives in Florida and is currently writing a book on Lt. Gen. Samuel "Hanging Sam" Williams.

The Outcome of Battle Often Hinges on Individual Actions

By Harry F. Noyes III

On 13 September, 1862, the 27th Indiana pitched camp near Frederick, Md. Pvt. Barton W. Mitchell and Sgt. John M. Bloss were just settling in for a well-deserved snooze when Pvt. Mitchell saw it—a piece of paper wrapped around three sticks. The sticks turned out to be costly cigars, and the lucky duo prepared to enjoy the luxury of a fancy smoke.

Then they discovered something else. The paper was filled with names like Gen. Robert E. Lee and Maj. Gen. Thomas J. (Stonewall) Jackson, and descriptions of military movements. Sgt. Bloss immediately recognized a Confederate battle order.

The men took it to their commanding officer, who forwarded it up the chain of command to Maj. Gen. George B. McClellan, commander of the Army of the Potomac.

The rest, as they say, is history. Gen. McClellan reacted to this fortuitous piece of intelligence with unaccustomed alacrity. He moved quickly to catch Gen. Lee before he reunited his divided army.

As it turned out, Gen. McClellan slowed to something more like his normal pace when he came face-to-face with Gen. Lee at a little town called Sharpsburg on Antietam Creek. He delayed, allowing what could have been an annihilating victory to become a bloody tactical stalemate.

Nonetheless, Antietam was politically decisive. It stemmed Gen. Lee's invasion of the North, ended any possibility of European recognition of the new Confederate nation and gave President Abraham Lincoln the excuse he needed for issuing the Emancipation Proclamation.

Two low-ranking soldiers, showing alertness and initiative, had handed their commander one of the greatest intelligence windfalls in military history and had helped save their country.

Almost 80 years later, on 19 August, 1942, a force of Canadian troops assisted by British commandos and a few U.S. Rangers made a large-scale amphibious raid on the Norman coast at Dieppe. The battle was a disaster for the Allies, with over half the Canadians killed or captured.

Yet things might have been different. The British naval force commander later wrote that the main cause of failure was the prompt defeat of a force landed at the village of Puys, east of Dieppe, to knock out a German battery and seize a headland overlooking the main beachhead. So formidable were the topography and defenses at Puys that planners knew they had to achieve complete surprise.

They might have done it, too. However, a German corporal sleeping in a nearby house heard shooting further to the east, where one of the British commando forces had run into opposition. He could have rolled over and gone back to sleep. After all, it was not his watch and nobody had told him to do anything.



Instead, he jumped out of bed and ran through the streets in his nightshirt, manned his machine gun and began blasting away in the darkness. This alerted other defenders at Puys and, when the Canadians hit the beaches there, their attack foundered quickly under a blistering fire. Barely ten percent of the Canadians at Puys made it back to England that day.

Just two years later, Allied forces made a brilliantly successful amphibious assault in Normandy. This time there was no intention to withdraw, and no disaster. After initial success, however, the Allies became bogged down. Reinforced Germans fought fiercely to contain the swelling Allied armies in the beachhead.

The Allies were stymied by the hedgerows. No mere lines of shrubs, these formidable thicket-covered earthen dikes were major military obstacles. Tanks could not get through them, and the ones that went over them exposed their soft underbellies to enemy fire.

The hedgerows were finally conquered by a mechanical device credited to Sgt. Curtis C. Culin Jr., of the 102nd Cavalry Reconnaissance Squadron. Sgt. Culin's invention bristled with tooth-like prongs, cut and welded from abandoned German roadblock materials.

Gen. Omar N. Bradley saw the Culin device on 14 July, 1944, and immediately ordered its mass production from German obstacles captured on the beaches. For ten days, Allied technicians labored day and night. When Operation "Cobra" kicked off on 25 July, some 60 percen. o the U.S. tanks were equipped with Sgt Culin's "Rhino" device.

The hedgerows were no longer an ob stacle. Gen. Bradley's First U.S. Arm broke out at St.-Lô and rolled forwar to liberate France and the rest of Europe

There are numerous similar tales. Dur ing the planning for D-Day in Norman dy, an obscure staff officer reportedl noticed that U.S. troops were schedule to land through the surf with an unman ageable weight of gear on their backs He argued successfully for cutting th loads in half, possibly preventing mas drownings or even a beachside defeat.

In the Pacific, M.Sgt. Edward Butler an aircraft mechanic, contributed immea surably to Allied victory. As noncom missioned officer in charge of a tean sent to recover and study a captured Jap anese Zero fighter, he showed unwaver ing determination in bringing back a parts of the aircraft—almost drowning i a struggle to retrieve pieces that fell o a barge in a storm.

He supervised the rebuilding of th plane to airworthy condition, personall analyzed its mechanical and performanc characteristics, and suggested tactics U.S pilots could use effectively against it.

The plane was flown, the tactics teste in mock dogfights and the new method taught to U.S. pilots. Shortly afterward a formation of P-38 Lightnings used th knowledge to score a decisive victor over Zeros in the Battle of the Bismarc Sea. The aerial route to other victori was open.

These five anecdotes tell a tale tha could be represented equally well by thou sands of other stories from any one history's many wars. Despite the atte tion focused on disciplined units and th size of armies, in the final analysis, wa are fought and won by individual sc diers. Many observers, such as militar historian S. L. A. Marshall, have note that even in mass battles the pivotal a tions that decide the outcome often r volve around the behavior of a handf of soldiers.

Despite the necessary hierarchy of m itary ranks, combat is no respecter human vanities regarding position ar accoutrements. Combat is the ultima democracy: it honors the smart, the co rageous, the imaginative, the energet and the determined—regardless of grad position or specialty.

The soldier who turns the tide may easily be a private as a colonel, a lieute ant as a general. The ideas that cou may spring from any brain, the spi that fires the victory may be born in ar heart and the hand that fires the critic shot at just the right moment may b long to a soldier of any race, education background or grade.

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T V : L O O K I N G A H E A D

Yet, if that were all these incidents had to teach, they would not be anything special. History books have long rushed to remind readers that military heroes appear in the most unlikely places. But there is another important lesson here.

None of the incidents described earlier constituted heroism in the usual sense of the word. There is nothing in most of these stories about soldiers risking their lives in any extraordinary way. We do not even know that these men were especially effective fighters. Some were not fighters at all. So far as it is known, none of them ever again gave reason for their names to be recorded in military history.

They were just good soldiers who did their duty—no more, perhaps, but certainly their duty. They cared, paid attention, showed initiative and energy, and played their parts conscientiously. That was enough. By doing their duty at the right time and place, these soldiers changed the course of battle.

That should be a reminder and an inspiration to all who are soldiers that they are important to their country and their fellow man. By doing their duty, nothing more, they can make a difference.

No matter how insignificant soldiers sometimes feel or how trivial their missions appear, they may matter in ways never suspected. There is no job too small to do well, and no soldier too low in rank to deserve the respect and support of his leaders and comrades.

The so-called "little jobs" and "little people" are, in fact, not little at all. They are the building blocks of great armies and great victories. One soldier counts. □

HARRY F. NOYES III is in the Individual Ready Reserve with mobilization assignment to a replacement battalion in Europe. As an Army civilian employee, he is the managing editor of the Wiesbaden, West Germany, military community newspaper.

Essence Assumes Many Forms

Variety Is the Spice of Leadership

By Col. Brooks E. Kleber
U.S. Army Reserve, retired

I received my commission through the Officer Candidate School (OCS) system and I am proud of it. When contrasted with the U.S. Military Academy, the Reserve Officers' Training Corps (ROTC) and direct commissioning, OCS was the most plebeian route to take. But in time of war, with the enormous demand for officers, there is no alternative.

I was bemused some years back by a study indicating that OCS officers performed at the company level better than officers from the Military Academy. Doubtless the company-level enlisted background of most officer candidates stood them well during their initial officer assignments.

All this came to me when I was thinking about leadership. The secretary of the Army wisely has made "leadership" the Army's theme for 1985. There is nothing more important, be it in the chief of staff, the Command and General Staff College commandant, the division commander or the platoon leader. Leadership is that somewhat elusive common denominator that must accompany professional knowledge and discipline to ensure the most effective job performance. It is different from management and yet there are some common elements.

Leadership assumes many forms. As an historian interested in military history education, I often talk about the value of history in the development of officers and noncommissioned officers. What better training device does the Army have than the historical example?

In talking about leadership (I was about to say "in teaching leadership," but I have doubts whether the subject can be taught), what better way of contrasting effective leadership styles than by the examples of Gen. George S. Patton Jr., ostentatious and profane, and Gen. Omar N. Bradley, homely and unassuming. The point, of course, is that leadership must come naturally; one cannot adopt a style alien to his personality.

I graduated from OCS at the height of the era of 90-day wonders. When I received my commission on 13 August, 1942, the Infantry School at Ft. Benning, Ga., was putting out an OCS class almost every day. While selection as a candidate did not mean an automatic commission, a relatively low percentage of candidates failed to complete the course.

When candidates were dismissed, it was without ceremony or embarrassment. Candidate Smith was wanted at the supply room, the tactical officer would announce. When his fellow candidates returned to the barracks at lunchtime, candidate Smith and his gear would be gone, his mattress rolled up at the end of the cot.

Leadership in the OCS curriculum was basic and elementary. At one stage, candidates would take a turn at moving the platoon to and from its training location. Voice was important. We spent long hours intoning such couplets as "Dingdong and Hong Kong" over and over. Gen. Patton with his relatively high register, would have had trouble with this one. But what could you do in 90 days?

The chap next to me in my barracks was a delightful and intelligent soldier named Frank Murphy. Unfortunately Frank did not exude leadership. His face seemed to be set in a sorrowful expression. He was of slight build and his head had a slight but permanent tilt to the left which added to his forlorn appearance.

His voice certainly was not good. On weekends, I would accompany him to nearby vacant places to help him practice his "King Kongs," but I had a rather bad feeling about his prospects. So did he. One day we returned to the barracks at lunchtime and he was gone, his mattress rolled up on the bare springs of his cot. I remember it vividly. He owed me ten dollars.

I went on to graduate, help activate the 94th Infantry Division and, finally, to join the 90th Division in Normandy as a replacement officer. Captured on D+20, I was liberated just before VE Day in Moosberg, Germany. Somewhere on the road back through France, I found some overseas issues of *Life* magazine.

Leafing through one issue, I came across an article about the liberation by U.S. troops of a prison camp in the Philippines. The lead picture showed a small group of soldiers led by an officer. My God, it was Frank Murphy. I could tell by the slope of his shoulders.

The caption confirmed my suspicion—1st Lt. Frank Murphy had led the attack on the main gate. He had gone overseas as an enlisted man, won a battlefield commission, then a promotion, then was selected for a sensitive leadership position.

Does all this prove that the OCS system was flawed? No, I am afraid that a 90-day period permits only the most rudimentary screening for so-called leadership principles. It does show that Army leaders should be careful not to rely on only the obvious; that courage, intelligence and steadfastness are sometimes packaged within sloped shoulders and faces with hangdog expressions.

Most of all, it should illustrate that the true essence of leadership comes in a variety of forms, not all of which are traditional and heroic looking. □

COL. BROOKS E. KLEBER, U.S. Army Reserve, retired, Ph.D., is assistant chief of military history at the U.S. Army Center of Military History, Washington, D.C. He has also served as chief historian for the Army's Training and Doctrine Command and the Continental Army Command.

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By Maj. Gen. Edward B. Atkeson
U.S. Army, retired

Flexibility Is the Key

The Options In Europe

Voices are again being raised to request a reexamination of U.S. military strategy in Europe. The essence of the argument cannot be disputed, essential as it is to the assurance that the United States has strong public support for its commitment to that vital region. If there are reasons for doubt or second thoughts about the U.S. role in the North Atlantic Treaty Organization (NATO) alliance, American leaders should hear them and judge anew the rationale for U.S. involvement.

The United States historically has counted Western Europe among its most important interests and is clearly on record that it would view an attack on Europe as an attack on itself. The language of the North Atlantic Treaty is unique in this respect. In no other international document with any currency is such unequivocal commitment on the part of the U.S. government found. U.S. leaders must be sure in 1985 that the judgments of almost 40 years ago remain valid.

Certainly, Western Europe has grown and expanded in its importance to the United States over the years. Besides strong historical and cultural ties, it should be noted that Western Europe now constitutes a highly developed industrial region of some 350 million people with a combined gross national product exceeding three trillion dollars. This region is a very special prize—and what is more, it is one which generates almost $100 billion each year toward its own defense.

That cannot be said of many other friendly regions of the world. Therefore, the first point to be made about Western Europe is that the stakes are high. If the United States is mistaken in what strategy it takes, the losses could be measured on a catastrophic scale.

The second point to be made is that the United States has been at this business for a long time. NATO was founded only shortly after World War II, and U.S. policymakers have been wrestling with one strategy or another ever since. There have been times when the debate would remit briefly, but the stage has seldom been quiet.

U.S. leaders should not lose their perspective as they consider the current problems to be faced within the alliance. There have been problems before, but there have also been many years of peace in that part of the world—a region not known historically for tranquility.

The third point to be made at the outset is that this is a freely formed alliance of sovereign nations. In only the most superficial ways does it parallel the War-



Reformist critics of NATO and its arrangements for the defense of Western Europe have some useful points to make, but the U.S. role must continue to be based on this strategic bottom line: we are better off with our European allies than we would be without them.

saw Pact. It is true that the senior military official in Europe traditionally has been an American, but that has been more a European choice than an American one.

The first requirement for the Europeans is clear evidence that the United States supports them. This country represents not only the power and prestige of the new world, a vestige of World War II, but also the single greatest hope that there will be lasting peace in Europe.

While one or another of the alliance partners may be at odds with the United States from time to time over this or that issue, there is no suspicion of the United States as a military or political threat to any other member of the alliance. (Compare this to the role of the Soviet Union in the Warsaw Pact.)

Further, it should be noted that the presence of the United States in Europe represents a tie to the heavy equalizers of modern times—nuclear weapons. It is clear that the Europeans regard U.S. nuclear capabilities primarily as deterrence to Soviet attack, not so much as a means for fighting a war. U.S. leaders cannot fault them for this on the record. There was a day when great coalitions of nations would go to war over the assassination of an archduke or an argument



Soldiers of A Battery, 6th Battalion, 52nd Air Defense Artillery, transfer Hawk missiles from a loader–transporter to a wheeled launcher, near Langenaltheim, West Germany, during the autumn, 1984, NATO maneuver, Certain Fury.

over land corridors or access to resources.

Certainly, wars continue in odd places today, but these hostilities are mere skirmishes in comparison with the conflicts that characterized the first half of this century. There is enough truth in the idea of *Pax Atomica* to make lesser states continue to huddle under U.S. leadership.

The Europeans need the United States to keep their independence, and both they and this country know it. They turn to the United States because it is in their interests to do so. It is a free choice. The United States is not simply the lesser of available evils. The choice is mutual because all concerned have a sense of greater good from the alliance.

What is being said about the alliance today and who is saying it must be examined. There is a rich supply of ideas on European strategy pouring forth from learned journals and congressional bills. The authors of much of this literature are not obscure cranks. Many are former secretaries of state and of defense; others are prominent U.S. senators. Some radical new ideas are flowing from the pens of great public servants.

The United States stands in 1985 with a successful record of European peace behind it, but a cacophonous din of voices presses this way and that as the country faces the future. What should U.S. leaders be concerning themselves with in Europe, and which way should this country's policy be going?

There are three issues which claim the lion's share of column inches in the press with respect to European security. Certainly, these are the issues that most need illumination.

Occasionally, critics strike a glancing blow at the basic concept of forward defense, burdening it with such adjectives as "unrealistic" and "inflexible," but, generally, most informed observers recognize its political importance to U.S. allies, particularly the West Germans. There is much discussion about the best way to mount a forward defense, and certainly there is concern over the U.S. ability to fulfill all of the requirements of flexible response—particularly at the lower, conventional end of the scale—but the basic idea continues to enjoy widespread acceptance.

The first major issue concerns the timing of the initial resort to tactical nuclear weapons to halt aggression in Europe. Colin Gray, a prominent theoretician, believes that immediate use is the only rational policy for Europe. He would agree with the first point made here—that Europe is important. It is so important, he has argued, that the Soviet Union must understand that if at any time it thinks of invading the West, it may be certain the roof will fall in.

This is not an inconsequential backwater, he would say. This is Europe. Whether to go the full measure of this country's options to defend Europe is not something to be considered at length. The United States assures Europe's secu-



MAJ. GEN. EDWARD B. ATKESON, U.S. Army, retired, was national intelligence officer for general forces planning at Central Intelligence Agency headquarters.

ty by posturing itself to strike immedi-
ely and decisively.

The opposite view is held by promi-
nt men—America's strategic greats of a
cade or two ago. McGeorge Bundy,
eorge F. Kennan, Robert S. McNamara
d Gerard C. Smith are all on record as
vocates of a nuclear no-first-use policy.
their view, any other course "involves
acceptable risks to the national life
at military forces exist to defend."

While they hedge their argument with
requirement for a strengthened confi-
nce in the adequacy of conventional
rces in the alliance, their objective is
ar. They believe that the no-first-use
sition is of a higher moral character
d is more rational because of the col-
eral damage that could be expected in
uclear battle on the densely populated
ins of Europe.

The principal difficulty with the argu-
nts of these strategists, Colin Gray in-
ded, is their apparent disregard for
advantages of ambiguity. They ap-
ently feel a compulsion to telegraph
S. punches in advance—Mr. Gray to
engthen deterrence, the rest on moral
l rational grounds.

The Soviet opponent is a specialist in



Former Secretary of State Henry A. Kissinger has proposed that the European members of the alliance assume the whole burden of conventional defense.

massive conventional operations and a keen believer in the calculability of the "correlation of forces"—especially in the conventional area. If the United States strengthens its opponent's hand with certainties, rather than by emphasizing uncertainties as is done now, it might invite an attack when the numbers look good to the enemy. That should not be this country's objective.

The second issue is the "Europeanization" of the defense of Europe. This is not a new matter, but it has certainly been given new prominence.

Ambassador Mike Mansfield used to talk about this frequently when he was in the Senate. "World War II is over," he used to say. "Bring our soldiers home." Few people took him seriously.

More relevant is the argument of Sen. Sam Nunn (D–Ga.). His amendment to the defense authorization bill last spring could have removed up to 90,000 U.S. troops over a three-year period if this country's NATO allies did not carry out long-promised defense improvements.

For years Sen. Nunn, and many others, have felt that the European members of the alliance have not been pulling their weight. He has been particularly vocal about their falling below promised three-percent defense budget increases and their notoriously low stockage of war ammunition and supplies.

Now, however, other notables are voicing similar views, and a far more sophisticated rationale has emerged. Last March, Henry A. Kissinger weighed in with an article in *Time*, entitled "A Plan to Reshape NATO." His essential points were that flexible response is no longer credible because NATO conventional ground forces are inadequate to repel a major Soviet attack and that European governments are taking cheap shots at the United States for its actions in Third World trouble spots just to please neutralist constituencies. His solution is to Europeanize the defense.

He does not state explicitly that the United States should pull its troops out, but he does advocate a "division of responsibilities" which would have the Europeans concentrate on the conventional defense while the United States would emphasize mobile conventional forces, presumably back in the states, for worldwide contingencies. How the withdrawal



West German infantrymen board a U.S. Army Blackhawk helicopter during the 1983 series of the Albatross exercises, designed to test the ability of West German and American units to operate together.



A U.S. self-propelled artillery unit passes through a German village during last fall's annual NATO exercises.

of U.S. troops from Europe would help to overcome the "fatal flaw" he sees in U.S. conventional force posture in Europe is not clear.

What Mr. Kissinger does make clear is that he is sick and tired of listening to Europeans criticize U.S. foreign policy and that he would like to subject them to a good dose of shock therapy. In the process, he argues, the United States should insist that the Europeans provide the next supreme allied commander in Europe (SACEUR). Then, somewhat transparently, he suggests that Lord Carrington be replaced as secretary-general of the Atlantic Council with an American of stature.

Typical of still more severe critics who have argued that U.S. forces should be brought home is Irving Kristol, who wrote an article to that effect in *The New York Times Magazine* in September 1983. He argues:

> Europe doesn't need 200,000 American soldiers to fight a conventional war; it has plenty of soldiers of its own and the military significance of the American soldiers is marginal.

Mr. Kristol believes that NATO is an "antiquated, bureaucratic alliance" which is "gradually emptying itself of all meaning."

It is difficult to find a more direct rejoinder to these arguments than that which the secretary of defense delivered to the Harvard Club of Washington last April:

> Those who urge us to reduce our commitment to NATO make two very dangerous errors. They claim that force reductions and other measures to limit the U.S. commitment to Europe would shock our European allies into generating more spending for their own defense. They also claim that, in the presence of the nuclear deterrent, conventional forces are inappropriate and not needed. . . .
>
> I have two observations for those who make these dangerously wrong proposals. First, in a true alliance based on mutual interest, which is what NATO is, wise men seek to encourage, not to shock, their allies. And, second, by decoupling conventional and nuclear deterrence, we risk encouraging the very aggression we seek to deter.
>
> We must remember that when we accepted our responsibilities as a member of the NATO Alliance 35 years ago, we made a choice. At that point, we chose to accept the responsibility to defend our freedoms and those of our allies in mutual exchange for the support each might give the other in the event of a conflict. . . .
>
> Now, the public is asked to consider various schemes, some even proposed by former members of the Harvard community, that fly in the face of our experience and recommend chastising our allies by reducing our physical and financial commitments to the alliance. They never make it clear how this will help America, or our allies. And indeed they cannot because that course would put at risk both our allies and ourselves. But those who try to get our allies to do more by recommending reductions in our defense of NATO overlook two points.
>
> First, while we cut our own spending on defense quite drastically in the 1970s, our European allies, in the aggregate, continued their progress in strengthening their defenses. In those years, while we did not meet our own commitments to NATO in any way of which we can be proud, our allies were meeting their commitments and they were helping us by so doing.
>
> Second, the most severe critics of our allies seem to overlook the actual force balance sheet. Our allies provide over half of the combat aircraft available to the alliance, nearly 40 percent of the naval force tonnage and nearly 60 percent of the ground forces. . . .

The final issue is the question of th depth of operations which this countr would want to undertake if NATO wer subject to attack. The Western allianc has always been a defensive one, and th means for mounting offensive actior have been so modest that the matter c deep offensive counter strikes in the fac of aggression (on other than fixed, pr planned targets) has not been a particu larly notable issue.

Now, however, a growing number c



oreticians—and some practitioners, uding the SACEUR, Gen. Bernard W. gers—suggest that there is much more can be done to add depth to the bat- eld to Western advantage. Various ers envision "placing at risk" the op- ent's logistical train, his succeeding ıbat echelons and, potentially, the existence of his satellite empire. The on takes different forms in different ıas, and not all of the ideas seem patible.

he U.S. Army has developed a tacti- version of deep attack it refers to as Land Battle." Concerned that previ- doctrine was too reactive and defen- y oriented, the Army now argues tactical units at corps level and be- should seek opportunities to strike essively at enemy targets deep in the

ıch strikes might be executed by ma- er, by fire or both. The emphasis is he seizure of the initiative once the e is joined, rather than on waiting to ttacked in a defensive position. Air- l Battle doctrine envisions the simul- ous engagement of enemy forces at ing distances, to include his reserves follow-on formations.

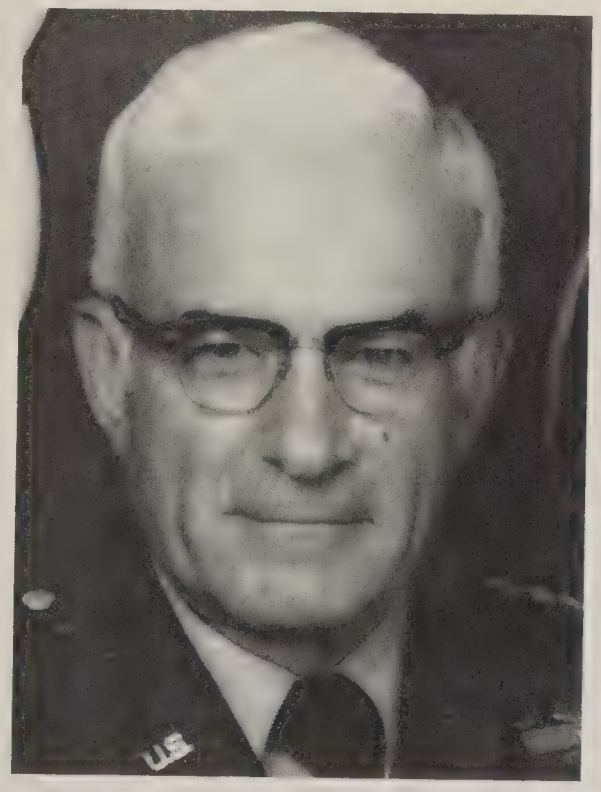
rticularly vocal on this issue, as well ı a variety of other, unrelated mat-

ters, has been a curious confederation of outside critics—some serious scholars, a few public officials and a number of outright charlatans—all operating under the general title of "military reformers." Some claim to seek a streamlining of military operations to emphasize more nimble maneuver action and fewer slugging fests. Others also seem to want to reduce the number of general officers in the services.

One apparently wants the Army to abandon its worldwide posture and to copy the structure and operational concepts of the Israeli Army. Another is sure that the U.S. Army is made up entirely of careerists and "hip-shooting cowboys," and that it should not be allowed to advise foreign forces for fear that it will create more monsters in its own image.

It might be supposed that some of these reformists would like to start over with a whole new officer corps that would think in different directions. All appear confident that they understand military affairs better than those in uniform and are prepared to rewrite significant portions of service doctrine. Whether they interpret AirLand Battle doctrine as a step in the right direction is not evident.

At NATO, the deep strike concept is slightly different, tending to submerge the politically awkward aspects of offensive ground action for fear of generating misunderstandings regarding the purpose of the enterprise. The NATO version appears more dependent on successful exploitation of "emerging technologies" than does the Army concept.



Gen. Bernard W. Rogers, the supreme allied commander, Europe, is worried that the brittleness of NATO's defenses could result in early alliance recourse to nuclear weapons.

Recent advances in sensors (radar, infrared, radio signals emissions detection and the like), for example, have given rise to expectations of enhanced future capabilities for locating enemy forces at great distances and for accurately targeting them with "smart"—or better yet, "brilliant"—munitions.

Emerging technologies (but not under that name) have been cited by no less an authority than the recently deposed chief of the Soviet General Staff, Marshal Nikolai V. Ogarkov, as the wave of the future. Improved conventional munitions, he said, will "revolutionize warfare." (Whether his optimism regarding these prospects was regarded as excessive by his superiors and contributed to his removal from office is not known.)

The NATO version assesses the capabilities of allied forces, at best, as adequate to sustain the initial pressures of a Warsaw Pact assault by the first strategic echelon. It recognizes, however, that soon thereafter the second and succeeding enemy echelons would arrive and that the defense would begin to disintegrate. Gen. Rogers has pointed out the rapidity with which this could occur, necessitating early resort to nuclear weapons to halt the enemy advance.

The NATO concept would have the allies exploit emerging technologies in order to be able to locate and strike the succeeding echelons before they arrived at the front. Recognizing the time delay until the requisite advanced weaponry would become available, this plan would have the allies accept the concept now and adopt such equipment as presently exists (aircraft, missiles, communications) to begin development of the procedures.

Controversy over the NATO version stems primarily from confusion over the AirLand Battle tactical doctrine, with its concept of offensive ground action, and the alliance strategy for nonaggressive deterrence and defense. Some criticism has also arisen from those who feel that emerging technologies have been vastly overrated and are a greater threat to national financial solvency than they are ever likely to be to the enemy.

Still another version of the deep strike theory has been developed by Professor Samuel Huntington of Harvard University. He suggests that NATO needs to assemble a capability for "conventional retaliation" as an option more credible for deterrence than the threat of resort to nuclear weapons. He sees feasibility in a

deterrent strategy based upon the threat of a NATO counteroffensive into Czechoslovakia and East Germany.

The professor also believes that such an effort would encounter less indigenous resistance than would a Warsaw Pact attack on West Germany.

East Europeans, he argues, have less reason to defend their continued subjugation by the Soviets than West Germans do to resist an invasion and future subjugation. He does not, apparently, give much weight to the fact that East Europeans have had experience with German invasions before and may not be at all enthusiastic about it.

Even in the case of the East Germans, the acceptability of a Western invasion may not be popular. As Rand Corp. analysts A. Ross Johnson, Robert W. Dean and Alexander Alexiev pointed out in their book, *East European Military Establishments: The Warsaw Pact Northern Tier*, "the uncertain political legitimacy in the GDR [German Democratic Republic] tends to reinforce military loyalty to the party."

The authors assess the East German Army as a reliable instrument of the party, largely because it has no separate source of national cohesion. Their analysis tends to rebut Mr. Huntington's supposition that a NATO invasion of the East would necessarily be met by less than wholehearted resistance by East Europeans.

The real problems with Mr. Huntington's thesis are of a military nature, however. While he notes that the NATO countries are unlikely in peacetime to commit sufficient resources to achieve an adequate posture of conventional defense, he apparently feels that current resource levels are sufficient for offensive action. This contradicts much of what is supposed about the nature of war.



Secretary of Defense Caspar W. Weinberger pointed out that proposals to reduce the U.S. role in the defense of Western Europe 'risk encouraging the very aggression we seek to deter.'

Experience has led military experts to believe that offensive actions are rather more consumptive of resources than defensive ones (at least in the short run), and that most successful offensives correlate with a favorable force ratio between the attacker and the defender. Further, Mr. Huntington seems to overlook important topographic factors in Europe.

Nature has girded Czechoslovakia with excellent defensive terrain along its western border (the Bohemian Forest) and placed the rugged Thuringer Wald astride the most direct invasion route into East Germany from northern Bavaria. While gaps exist, they offer rather thin reeds upon which such an ambitious scheme would rest.

The 40th anniversary of the famed German counteroffensive in World War II in the vicinity of Bastogne, Belgium (the "Bulge"), was celebrated recently. That campaign illustrated the difficulties and costs involved in an attempt by one force to penetrate a superior one in rugged terrain. The Germans paid dearly for their gamble, and, ultimately, hastened the date of their final collapse.

While knowledgeable analysts are almost unanimous in their opinion that NATO should maintain its forces in a nimble posture, ready to exploit local advantages, this would not justify the foundation of Western fortunes on a risky hypothesis which could as likely prove mistaken as correct.

What can be concluded from this re-



U.S. mechanized infantry in the field, following deployment to West Germany for the 1984 NATO exercises.



U.S. and West German military policemen confer on traffic ground rules before a river crossing during a joint exercise.

iew? Is U.S. military strategy for Eu-
ope a sensible one? If not, what aspects
ierit change?

First, those involved should not be
verly alarmed at criticism. Properly re-
eived, criticism can be healthy and con-
ucive to timely change when change
ould bring improvement. Criticism of
merican allies should not be alarming
ther. Both this country and its NATO
lies have problems, but, generally, what
ie United States and its friends are do-
ig makes sense.

The United States is certainly bet-
ter off than it was four years
ago, before the defense buildup,
id it is better off with its allies than it
ould be without them. This does not
ean that U.S. representatives should
ot speak frankly with them, when and
here frank talk is merited, but U.S. in-
rests must be kept in mind.

Most serious observers agree that U.S.
terests entail a good, solid presence of
S. troops in Europe and a solid image
r the United States as a country that
kes European security seriously and
es not waiver at every passing fad.
iend or foe should understand that the
ited States is a constant factor in West
ropean defense, and that it is so be-
use it is in U.S. interests to be there.
Second, the United States should stick
th its basic strategy of scaled, flexible
sponse. There is no other scheme that
kes more sense. U.S. leaders should
t worry too much about ambiguities.
fact, strategists should strive to strength-
them. The East-West balance should
kept as far out of the area of calcula-
ity as possible. The United States stands
ly to lose if it allows its reactions to ag-
ssion to be measured in quantifiable
ms.

This country does not want to facilitate
viet cost-benefit analyses of their attack
ions. This is particularly important in
nuclear arena. No one can say what
l happen in the future. Options must
kept open and inscrutability to oppo-
its maintained. The siren song of spe-
us formulae which would pin this coun-
's forces down and make their actions
dictable should be ignored.

Third, the notion of adding depth to the battlefield appears basically sound for development at both the operational (theater) and tactical levels. However, it must be pursued with tact, deliberation and care. Wary allies must understand that the intent is not to transform the alliance into an aggressive pact. The alliance is weaker in the conventional realm than its potential opponents. It does need to explore all possible avenues of offsetting the considerable eastern advantage. If it can be done with technology, so much the better. Certainly, that is the West's strong suit.

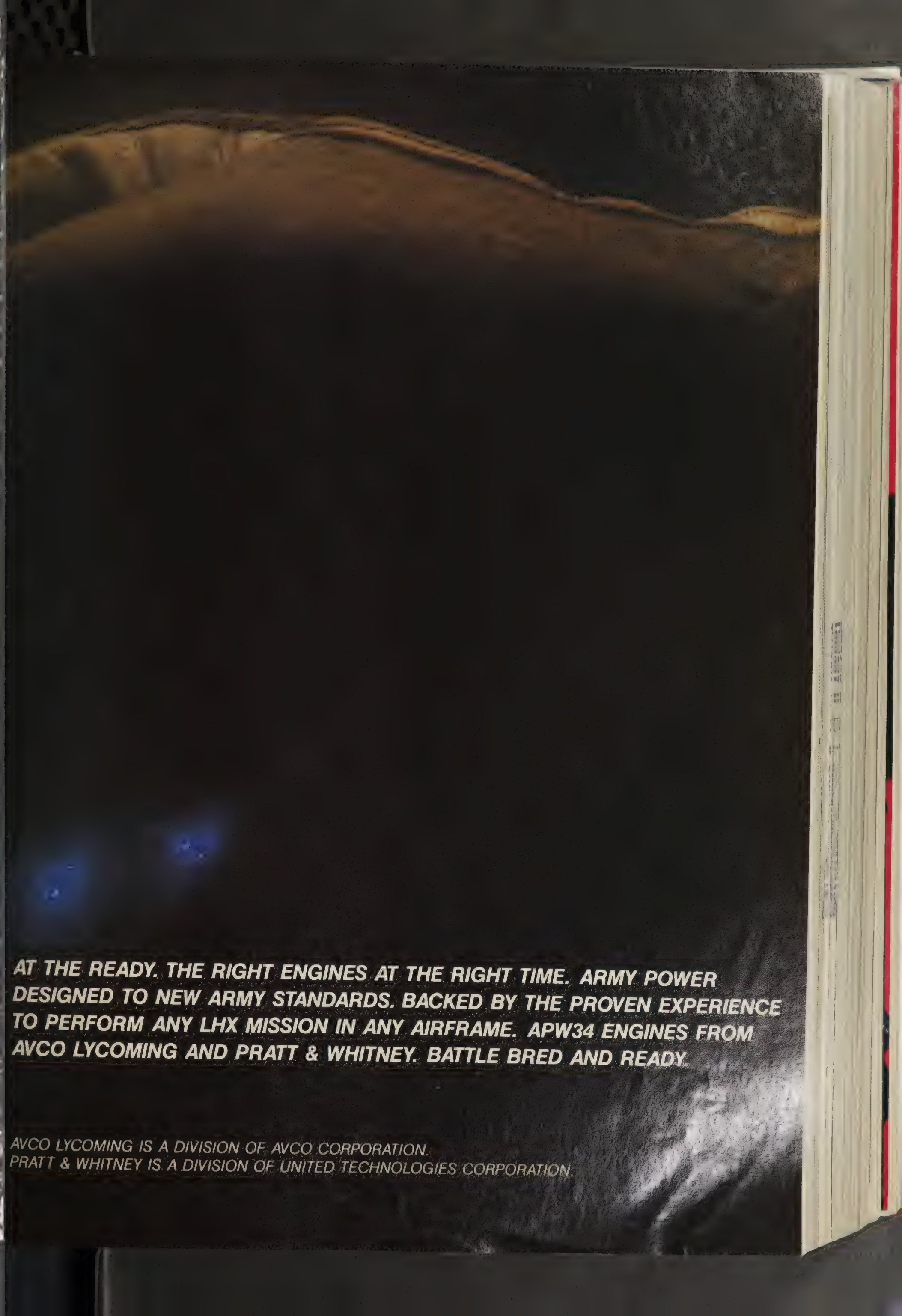
Deep strike should not be trumpeted as the answer to all ills, however. It is not. It is not even a different strategic option. It is a concept for exploiting opportunities to make basic strategy work —hence restoring its credibility.

Finally, the United States needs to work more closely with its allies to improve its international doctrine and procedures. For too long, this country has treated many of the problems with its strategy as though it were designing a U.S. unilateral enterprise in Europe. Insufficient effort has gone into making sure that American doctrine and practices mesh with those of others in the alliance.

Detailed schemes for fighting a U.S. division or corps in Bavaria have been developed, for example, but this country has insufficient experience in integrating these forces with other national and international formations. Elaborate systems for transmitting vital tactical intelligence to U.S. units fighting in a U.S. corps exist, but U.S. planners tend to overlook the likelihood that if war occurred, as many as half of the U.S. divisions and brigades might of necessity be pressed into service as part of Belgian, Dutch and West German corps. Cross-assignment of national forces might prove to be more the rule than the exception.

Rather than wringing their hands over what the Norwegians or the Turks cannot or will not do, as some critics seem inclined, U.S. strategists should be focusing on what the United States can do, as a member of the alliance and on how this country's considerable influence can be used to improve the enterprise. ☞


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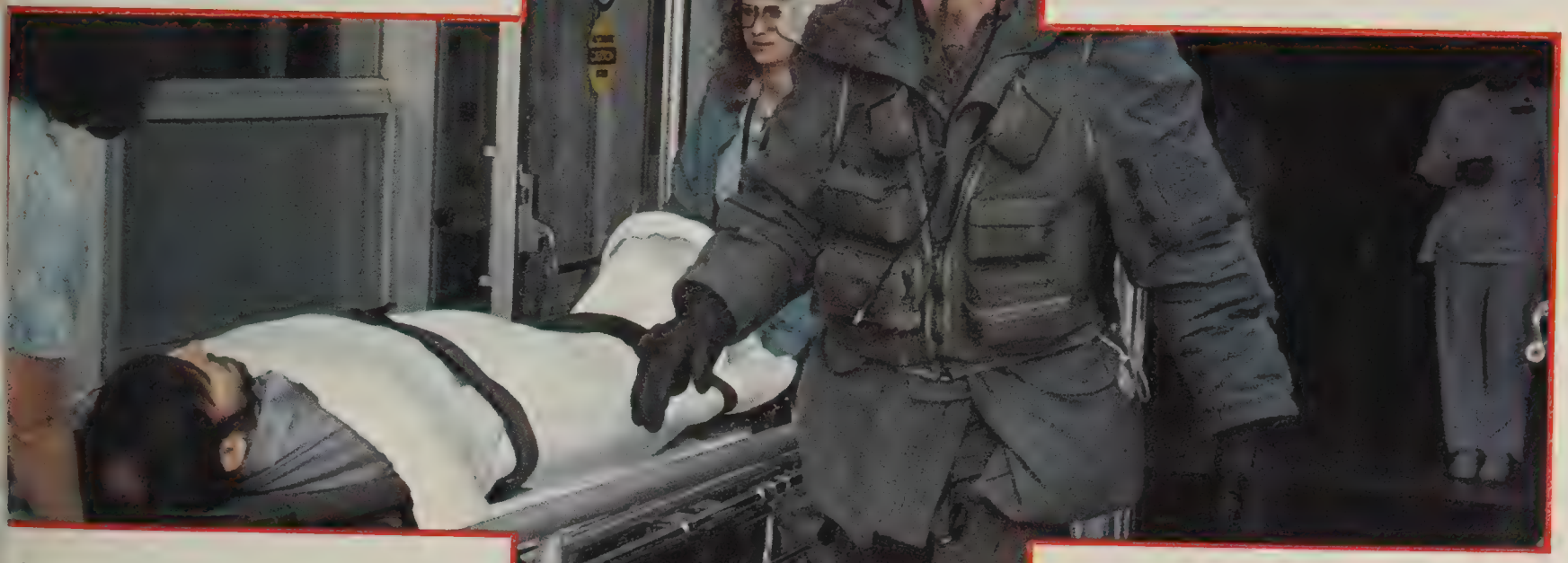
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MAST: The Army As a Good Neighbor

By Ted Blankenship

Army helicopter pilots sharpen their skills while helping local communities under a program that provides military aerial ambulance service in civilian emergencies.



James O. Hale glanced out the window of his hospital room and saw the answer to his prayers, an ·my UH-1 helicopter. It was landing St. Francis Regional Medical Center, ichita, Kan., with a cardiac patient)m a small Kansas town.

Mr. Hale needed a helicopter to get to e University of Kansas Medical Center Kansas City. He was to be the cen- 's, and the state's, first heart transplant tient.

He had survived double bypass surgery 1981, but had since suffered six heart cks and was much worse. In July 1, his family gathered at St. Francis nd a way to get him to Kansas City. he problem was money. Medicaid the medical center would take care he estimated $80,000 for the opera- . The trip to Kansas City in an am- nce or commercial medical evacua- helicopter would cost $1,700. The ly had only about $1,000.

r. Hale's brother-in-law ran down ıospital corridor to find the helicop- pilot, CWO 2 Carlos Zayas, and co- , CWO 2 John Finkbiner. "Yes," said CWO Zayas, "we'll make the trip if we can."

CWO Zayas called his superior at Ft. Riley, Kan., Maj. R. Bruce Molitor, commanding officer of the 82nd Medical Detachment, code name "Dustoff," or Military Assistance to Safety and Traffic (MAST) when it is transporting civilians. Maj. Molitor gave his approval, and flight medic Sp.5 Donald Tuscano and crew chief Sp.4 Leroy Vigil carefully placed Mr. Hale in the helicopter.

The heart transplant was a success, as are Ft. Riley's MAST program and 31



The MAST alert crew scrambles at Marshall Army Airfield, Ft. Riley, Kan.

similar units in 29 locations across the nation.

"We're detachment size," said Maj. Molitor. "We have six helicopters and 47 people, including pilots, crew and medics. Our primary mission, of course, is combat readiness. We're attached to the 1st Combat Aviation Battalion."

"It's a great program," said Capt. Richard Ellenberger, a pilot. "It keeps us sharp and combat ready—and helps the civilian population, too. It's nice to know we can help when there is an emergency."

Dr. Arnold Levenson, a Manhattan, Kan., podiatrist and MAST civilian coordinator for the Ft. Riley unit, said such emergencies are frequent. "Last year we flew 80 civilian missions," he said, "a total of 16,000 air miles."

Nationally, in fiscal 1984, MAST units completed 1,919 missions, transported 2,083 civilian patients and flew 4,353 flight hours.

Of those missions, 69 percent were hospital transfers; 29 percent, pickups at accidents; and the other two percent, transportation of blood, medical supplies and organs.

MAST evolved from the Highway Safety Act of 1966. The National Highway Safety Bureau, which later became the National Highway Traffic Safety Administration, asked the U.S. Coast Guard if its search and rescue capabilities could be applied to highways. The following year, the Coast Guard suggested a multiservice plan in which military helicopters could be used for highway medical evacuation.

In 1969, the Department of Transportation asked the Department of Defense to consider military helicopter support of civilian emergency medical service systems. A pilot project was undertaken in 1970 at Ft. Sam Houston, Tex., to test the MAST concept. Testing was successful and soon expanded to Ft. Lewis, Wash.; Ft. Carson, Colo.; and installations in Idaho and Arizona.

A report on the test sites by the Department of Health, Education and Welfare for six months in 1970 showed the units at the five sites flew 182 missions, which required 290 flight hours.

The missions go much more smoothly now than they did then, according to Dr. Levenson, because pilots can communicate with the highway patrol, local police, and military and civilian ambulances below. Also, on-board medics can communicate with hospital personnel.

When the Ft. Riley MAST unit was formed, the aircraft assigned to it were equipped with military communications only. Pilots could contact military ambulances but not Ft. Riley's own Irwin Army Hospital. There was no radio contact at all with civilians.

This communications shortfall nearly resulted in disaster during a mission in November 1982. A private airplane crashed in the Kansas River, killing the pilot and injuring two passengers.

A MAST unit trying to land near the crashed plane was almost down when a Kansas Highway patrolman noticed an electric wire stretched across the river in the flight path. The trooper frantically waved the pilot up, just in time.

"I didn't sleep much that night," said Dr. Levenson, "and before morning I had made up my mind to raise the money for a new air-to-ground communications system."

He discovered, however, that installing civilian equipment in military aircraft is not easy: "If you need something special for civilian use, the community must supply it. But military equipment is seldom compatible with civilian. Happily, we found a Kansas City company that makes radio equipment which works with military gear."

Dr. Levenson raised $23,000 for an integrated system that allows the pilot and copilot to communicate with highway patrol base stations and mobile units, ambulances on medical frequencies and local police on the mutual-aid frequency. Additional equipment lets on-board medics talk with emergency rooms and hospitals.

Unfortunately, he said, permission to install the equipment could not be obtained for all six of the unit's aircraft at the same time. Similar systems have been installed in many of the MAST units nationally, according to Dr. Levenson.

For the most part, then, MAST radio communications are adequate. In some communities, however, there is another kind of communications problem, one that stems from disputes over territory. Some for-profit air ambulance services, such as LifeWatch at Wesley Medical Center in Wichita, claim that MAST units are giving away what they have to sell, namely air ambulance services.

The MAST units in most cases limit their coverage to a radius of 100 nautical miles, however. At Ft. Riley, for example, about 70 percent of the missions are within 50 miles of the post.

"We simply can't venture much farther than 100 miles," said Capt. Ellenberger. The main reason, he explained, is that the UH-1 has a range of only 200 miles. To

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TED BLANKENSHIP is a free-lance writer based in Wichita, Kan. He was a newspaperman for 29 years.



Hospital nurses help Army medevac crewmen transfer a patient to a waiting UH–1 helicopter.



Police and firefighters (left) *are always on hand when MAST aircraft land in a civilian community.*

up someone at Russell, Kan., for sportation to the University of Kan- Medical Center requires a transfer: lying the 100 miles to Russell and to Kansas City is beyond our range. re fly to Russell and back to Marshall Army Air Field [at Ft. Riley] where another helicopter is waiting. We land beside it and transfer the patient for the second leg of the flight to Kansas City."

Federal law also prohibits military units from competing for emergency medical evacuation missions in areas where comparable support can be provided by civilian operators. In some areas, however, it is difficult to determine whether the MAST unit is encroaching. Agreements have been worked out with commercial services in Omaha, Neb., and Kansas City, Mo. Dr. Levenson said negotiations are under way with Wesley Medical Center in Wichita.

"We don't want problems with the commercial systems," he said. "I'm in business myself, and I understand the profit motive. We simply want what is best for the patient."

That is the way it is nationally, according to Cdr. B. Thomas Scheib, executive secretary of the MAST Interagency Executive Group, U.S. Department of Transportation.

"Obviously," he said, "there has to be a balance between the livelihood of enterprising health groups and patient care. If



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Army medevac craft takes off from the helipad next to St. Mary's Hospital, Manhattan, Kan.

:y can provide the same type of re-
)nse and support in the area covered
MAST, then we'll back off, and that's
ir territory. But I don't see that hap-
ning.

"Where we have had hospitals or com-
nies come in next door to bases in
ier parts of the country, usually we
'e allowed the MAST company to con-
ue, if as nothing more than a backup."
Also, as Dr. Levenson pointed out,
AST medics are well trained. They
'e the military training that all medics
through, and they must also attend
lian classes. Dr. Levenson, who coor-
ates civilian training, said the goal is
nave all MAST flight medics certified
the state as qualified emergency medi-
technicians.

It is a constant retraining program,"
said. "We send them to St. Mary's
spital in Manhattan, Kan., for EKG
rses, to the University of Kansas Med-
Center for neonatal care training and
St. Francis in Wichita for continuous
support training. Additional training
soon be provided at Stormont-Vail
pital in Topeka, Kan."

he courses are provided free of charge
the hospitals for the most part, ac-
ling to Dr. Levenson, because they
t medics to be as well trained as pos-
. He also briefs hospitals on what
military can and cannot do; he ex-
ns to the MAST people the needs and
blems of civilian medical personnel
institutions. "It's one of my most dif-
t tasks," he said.

To make sure the system runs smoothly, MAST units use a checklist to determine which missions should be taken and which should be left to the ground ambulances and other medical evacuation systems. It also gives the medics and crew the information needed to make the run.

For example, a call comes to the dispatcher in the 82nd Detachment's headquarters at Marshall Field. The dispatcher fills out the checklist, including such information as date and time received; requestor's name and telephone number; number of patients and their location; patient name, age, sex and type of injury or illness; treatment and drugs given prior to transfer; method of marking pickup site; the requesting and receiving hospitals; special equipment requested; and whether a physician or attendant will accompany the patient.

If an immediate response is merited, a crash alarm (horn) is set off, and the crew first called up scrambles. The copilot and crew chief start the helicopter, and the pilot and medics pick up the information. They run to meet the helicopter. Usually, just three minutes elapse from the time the telephone rings to takeoff.

"I try to slow them down," said Maj. Molitor. "They're subject to the ambulance syndrome. We don't want to wreck the ship and kill four people to save one life."

Yet saving lives is what MAST and the 82nd Medical Detachment do, and the crews and medics work hard at it. Two crews are on duty at all times. Pilots are on call 85 to 90 hours a week, not all of it piloting. Medics are on call 120 hours. Often both crews on duty are in the air at the same time.

During a snowstorm three years ago, four helicopters were airborne simultaneously. Regulations require one aircraft on the ground at all times, however. As Maj. Molitor pointed out, the first priority is military evacuation, and it must always be available.

Most of the time, availability is not a problem. There is generally enough equipment and manpower to handle both military and civilian needs, but the demand for air ambulance services is burgeoning. Over the past decade, the number of air ambulance services across the country has grown from very few to at least 81.

MAST units are not expected to make a profit, but the favorable publicity makes up for the financial loss. There is no actual loss to taxpayers for transporting civilians because the missions are considered training, which would occur even if there were no MAST.

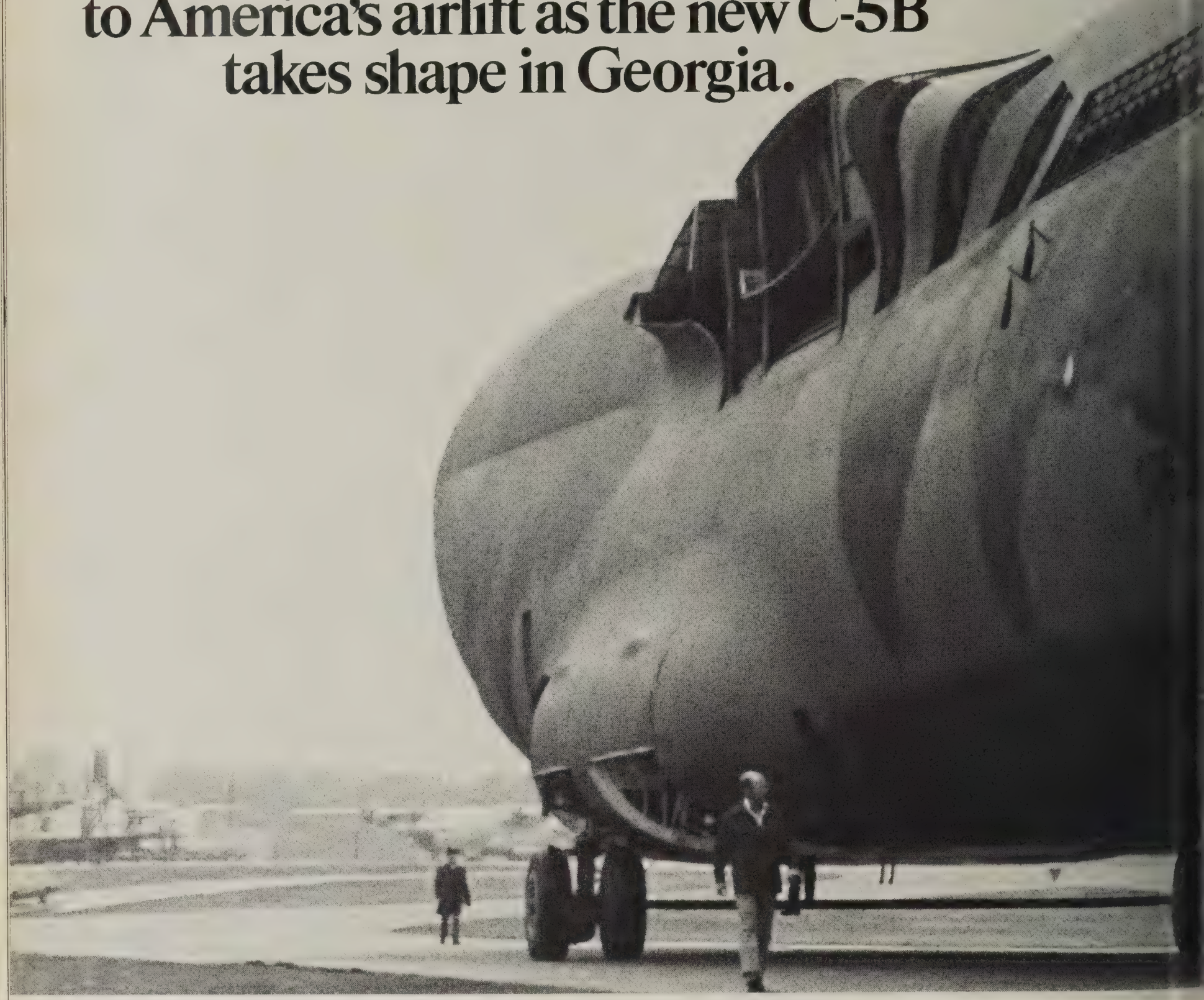
The actual costs of the program are difficult to estimate, according to Cdr. Scheib: "We're talking about everything from the boots on the soldiers' feet to training, airframes to maintenance, fuel costs and the additional training the community provides."

MAST units are not expanding as rapidly as similar civilian services, but there is growth. Cdr. Scheib said applications are in now for new MAST units in Alaska and New York. Of the 31 existing units, 18 are active-duty Army Medevac (medical evacuation), six are Air Force Aerospace Rescue and Recovery, four are Army Reserve, two are Army National Guard and one is an Air Force Reserve unit. Another 18 Army National Guard and eight Army Reserve units are available for activation.

"It's a satisfying job," said Capt. Ellenberger. "After a mission we often get thank you notes, and we're [illegible] ting Christmas cards from the patients and their families. It makes us feel like part of the community. And that makes all those hours worth it."

Innovation

Give new quality and strength to America's airlift as the new C-5B takes shape in Georgia.



Lockheed-Georgia
Giving shape to imagination.

Marietta— April 1985

The fuselage of the first of the USAF's new C-5B aircraft has passed its pressure testing with flying colors and has donned its battle colors. Shown on its way to final assembly, C-5B #1 now is receiving at a rapid rate its wings, engines, tail section and other major components.

When this historic C-5B rolls out



his summer, it will be an aircraft irtually ready for check flights and elivery. It also will set new standards of quality and reliability hile still meeting budget and hedule targets.

A modern, improved airlifter, the -5B is a superior example of innoation in aircraft design, materials, nd manufacturing. It has *improved* ionics, engines with increased reliaility, and new alloys with greater resistance to fatigue and corrosion.

Among the advanced techniques used in C-5B manufacturing is the new L&F Stretch Forming Press for fabricating large skins and heavy aluminum extrusions such as the huge C-5B wing root caps much more quickly and efficiently.

The fixed-price C-5B program will increase America's outsize cargo capacity by 65%. Airlift, vital to deterrence, will be greatly enhanced, increasing the nation's ability to move troops and all of their equipment anyplace in the world they are needed.

As the first C-5B approaches rollout, the men and women at Lockheed-Georgia, along with the thousands of employees at Lockheed's C-5B suppliers in 45 other states, take pride in their contributions to the quality and success of the C-5B program.

U.S. policy in Central America shows some of the salutary effects of hard-won Vietnam experience, but the notion that American military power is the source of most of the world's ills is not one of the relevant 'lessons'—especially in a region of vital national strategic interest.

By Rep. Ike Skelton



Throughout a great portion of U.S. history, this nation has been fairly successful in ignoring developments in the rest of the world. Blessed by the safety of vast oceans on either side of the continent and by an abundance of natural resources, the United States has had little need or desire to become involved in the affairs of the world.

By the late nineteenth and early twentieth centuries, however, the situation had begun to change. Expanded trade and commerce fostered greater political involvement. The United States was drawn into wars with Spain, in 1898, and, later, with Imperial Germany, in World War I. Yet even after that European war, America continued to resist involvement in the affairs of the world. This country did so, however, at its own expense.

The key lesson for the generation that

ame to maturity during the 1930s was Munich, 1938, where Neville Chamberlain, he frail, old prime minister of Great Brit- in, sold out a resolute and embattled al- y, Czechoslovakia, for a worthless prom- se made by Adolf Hitler.

Winston Churchill understood the fate- l mistake made there. "Britain and France," e said, "had to choose between war and ishonor. They chose dishonor. They will ave war."

The war the United States had hoped o avoid came about anyway and was ven more costly than the previous one. While 15 million died in World War I, ore than 50 million died in World War .

Since 1941, the United States has played major role in the affairs of the world. fter the war, the United States did not peat the mistake made a generation ear- r when it withdrew from center stage. mericans had learned hard and tragic ssons: isolationism does not guarantee ace; appeasement only encourages dic- tors.

After the defeat of the Axis powers, e specter of Soviet communism threat- ed a prostrate Western Europe. Through e policy of containment, the United ates vigorously resisted the Soviet threat Europe. The Truman Doctrine, which ovided military and economic aid to eece and Turkey, was soon followed by the Marshall Plan, which provided economic relief to the rest of Europe. The signing of the North Atlantic Treaty Organization (NATO) agreement committed the United States to the defense of Western Europe.

The United States had learned from its mistakes made after World War I. It remained fully involved in the events of the world, and firmly and successfully resisted Joseph Stalin's efforts to undermine the stability of Western Europe.

In Vietnam, however, the United States misapplied the lessons of Munich. Europe was and remains vital to the security of the United States; Vietnam never was. While the policy of containment was appropriate in Europe, it was not in Vietnam. As early as 1951, an Army War College study concluded that the United States "should not become involved in the area beyond providing material military aid."

President John F. Kennedy was right when he said that, in the final analysis, it was their war to win or lose. U.S. efforts in Vietnam should have been confined to providing material support only.

This is not to say that this country could not have won the war once it decided to fight. Unfortunately, a senseless strategy hampered U.S. efforts. Civilians with little or no combat experience fashioned a strategy that gave greater weight to cost-benefit ratios than to the insights of military commanders. Unfettered firepower, however, was not the cure to an established insurgency. U.S. strategists did not understand that truth until late in the war, after much precious time had been lost. U.S. military leaders had failed to get across the message to their civilian superiors that the strategy was not working.

After the Tet offensive of 1968, U.S. advisors stressed counterinsurgency and involved the South Vietnamese in the planning process. "Vietnamization" became fashionable. It meant, however, more than just turning over the military effort to the South Vietnamese. Political and economic programs also came under greater Vietnamese control.

Progress was slow, but by 1972 a spectacular shift in the strategic balance had occurred. Insurgency was inert for all practical purposes. Major roads reopened, resettlement began, land reforms took root and rice bowls were filled. The United States had won at counterinsurgency and could cope with conventional conflict.

Gen. Vo Nguyen Giap's Easter offensive in 1972, his effort at conventional war, played right into U.S. strength. American C-130s transported South Vietnamese paratroopers and marines from one hot spot to another. Navy aircraft mined the key supply port of Haiphong, and

ery Few Parallels with Vietnam Experience

Central America: A Whole New Set of U.S. Concerns



The strategic approach in Vietnam changed after the Tet offensive: Army clerks pressed into service as reaction force riflemen defend their activity against Vietcong attacks at Tan Son Nhut Air Base, January 1968.

129 B-52s were made available for strikes against concentrations of North Vietnamese regiments as they prepared to go into battle. U.S. air power on this occasion proved decisive, and Gen. Giap retreated.

Yet Americans had become impatient with the war. After the peace agreements were signed in 1973, the United States substantially reduced its aid to the Republic of South Vietnam. The South's ability to fight a conventional war was crippled.

Incoming shipments of ammunition, petroleum products and repair parts were not equal to expenditures, despite conservation efforts. While the Soviet Union continued to supply North Vietnam heavily, the United States decided to bow out. Without continued U.S. material support, defeat in South Vietnam was inevitable.

Some of the same arguments used today by those who oppose U.S. efforts in Central America were used by opponents of U.S. policy in Vietnam. Yet, in the case of Vietnam, history has since proved those arguments incorrect.

For example, opponents of U.S. policy in Vietnam argued that the insurgency in that country was indigenous rather than manipulated from the outside. Yet, in French television interviews, Gen. Giap and a subordinate admitted that the North Vietnamese communist leadership decided in 1959 to organize an armed revolt against the Saigon government. As a result, some 20,000 men moved south over the next few years to help organize and lead the Vietcong insurgency.

Opponents of the U.S. role in Vietnam also took the position that a communist victory was preferable to the continuation of the war. They discounted fears expressed by many that a bloodbath would take place. Once again the record has proved them wrong.

Approximately 1,000,000 Vietnamese were sent off to "re-education camps" after the fall of Saigon in 1975.

REP. IKE SKELTON (D-Mo.) serves on the Armed Services Committee and the Select Committee on Aging. He was first elected to the House of Representatives in 1976.

Hundreds of thousands managed to escape across jungle frontiers and by sea. Many thousands of those who made the dangerous journey by boat lost their lives.

Finally, it must be admitted by those who opposed the Vietnam war that two of the dominoes did indeed fall—Cambodia and Laos. In the case of Cambodia, the consequences were disastrous. Several million died at the hands of the Khmer Rouge government of Pol Pot.

One of the great casualties of the Vietnam war was the breakdown in the foreign policy consensus that existed in this country from the late 1940s until the late 1960s. During that period, most Republicans and Democrats believed in the centrality of the East-West struggle and the corresponding requirement to contain the spread of communism. This no longer holds true. The United States has been scarred by a failed war that took over 58,000 American lives. The cry is "never again."

Yet if the lessons of Munich were misapplied in the Asian jungles of Vietnam, it is equally true that the so-called "lessons of Vietnam" have been misapplied by those who are critical of this nation's efforts in Central America. Munich was *not* Vietnam and Vietnam is *not* Central America.

There are, however, similarities between the two situations. Both cases involve communist-inspired insurgencies in jungle areas of the Third World. The domestic causes of unrest include poverty, disease and governments with spotty human rights records. However, the differences greatly outweigh the similarities.

In Vietnam, U.S. soldiers fought battles 8,000 miles from home in an area where the United States had never been a major power broker and where the importance of the region to U.S. national security was minimal.

In Central America, on the other hand, the fighting is on a much smaller scale where no U.S. combat troops are involved, in an area some have described as America's front yard, where the United States has traditionally exercised great influence and where the strategic importance of the region to U.S. national security is understood by most Americans.

This is America's "neighborhood." The security of the Panama Canal and the Caribbean sea-lanes are at stake, not to mention the possible disruption that would be caused by the influx of hundreds of thousands of refugees if the area came under communist control.

In Central America, U.S. strategists are applying some of the lessons learned in Vietnam. First, El Salvador's President Jose Napoleon Duarte is a leader worthy of U.S. support. He has brought about a decline in the activities of right-wing death squads. His efforts to negotiate directly with Salvadoran guerrillas mark him as a man of courage.

A major problem with South Vietnam's government was that it appeared unworthy of U.S. efforts. It appeared hesitant,

competent and corrupt. No amount of ublic relations work could convince the merican people otherwise, although, comparison with the North Vietnam- government, it was a model of hu- anitarian rule.

Second, the United States has confined role in the region to one of support. is nation can and should provide arms, ining and equipment. In addition, the ited States is supporting those econom- and political reforms designed to give people of the region a stake in their pective governments. Advisors have en kept to approximately 55 in El Sal- dor. Introduction of U.S. combat forces re would be counterproductive.

Third, U.S. leaders have formulated an overall regional strategy for dealing with the area's serious blems. The bipartisan Kissinger Com- sion recommended substantial econom- id, some military aid and keen atten- to human rights. The troubles of El vador, Honduras, Guatemala, Costa a and Nicaragua cannot be viewed in lation.

Three years ago, El Salvador, Hondu- Guatemala and Nicaragua were each erned by military regimes. Change an in November 1981, when Hondu- held a free presidential election and chose a moderate liberal, Dr. Roberto Suazo Cordova. El Salvador followed in 1982 by holding an election for a constituent assembly. By the spring of 1984, the democratic process in that country had brought to power another centrist, President Duarte.



Photo: AP/Wide World

Jose Napoleon Duarte
President of El Salvador

Guatemala held a free election for a constituent assembly in July 1984, in which the two leading parties were the Christian Democrats and the Democratic Union of the Center. In none of the three countries did the arbiter of past elections, the army, attempt to step in.

Only in Nicaragua are there serious concerns about efforts to institute true democracy. More than 3,000 Cuban military and security personnel are attached to Nicaragua's armed forces and to its internal security and intelligence organizations.

Hard-line Marxist–Leninist elements among the Sandinistas have increased their control within the state administrative agencies of the government. Since 1979, the Sandinistas have devoted a great deal of effort to building their military forces. They now have the largest armed forces in Central America.

Arturo Jose Cruz, the only genuine opposition figure, refused to take part in the 4 November, 1984, elections because he could not get assurances of freedom of movement, assembly, and equal access to the media that he considered necessary. Arturo Cruz, a former World Bank official and one-time Sandinista government leader, broke with the Sandinista leadership when he realized they had no intention of honoring pledges to



Photo: AP Wide World

Part of the voter turnout in the Mejicanos area of San Salvador, during the March 1984 elections that returned President Duarte to power, this time as a freely elected head of state.

institute true democracy in Nicaragua.

One of the ugly legacies of Vietnam is the notion, in some quarters, that America is the guilty party, that the use of U.S. power is a source of evil and, therefore, that the main task in foreign policy is to restrain America's freedom of action. Many would use the "lessons of Vietnam" refrain in an effort to prevent the United States from acting to counter communist aggression elsewhere in the world, particularly Central America.

I strongly believe that the approach this country is taking in Central America is generally right. The United States is supporting moderates who believe in democracy and are resisting democracy's right- and left-wing enemies. The U.S. effort there, however, will be a long-term one. Progress will be slow, and the American public will have to learn patience and perseverance. Immediate results cannot be expected.

I admit that I have been a strong supporter of the "contras" in their fight against the Sandinista government. Many of those same people fought with the Sandinistas against Gen. Anastasio Somoza-Debayle.

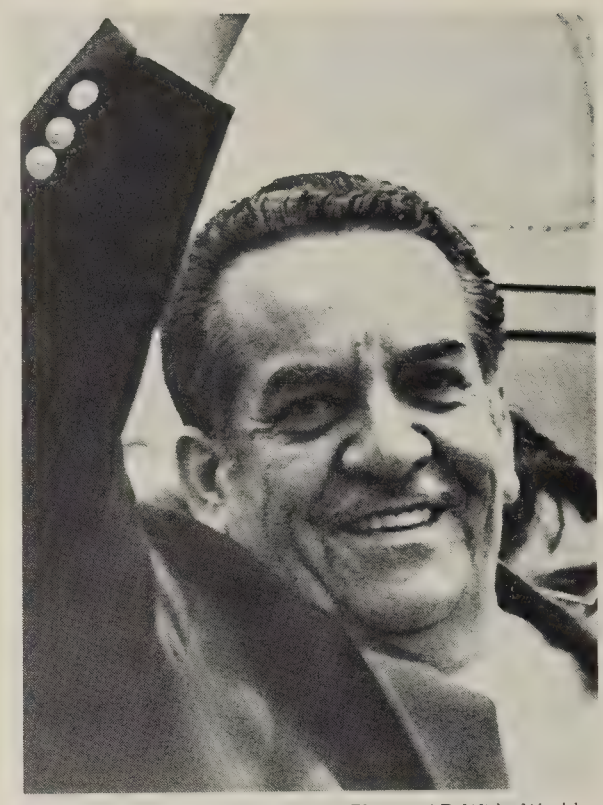


Photo: AP/Wide World

Roberto Suazo Cordova
President of Honduras

They have decided to fight against the current government in Managua because it has "hijacked" the revolution for which they fought. Unlike President Duarte of El Salvador, who has met with Salvadoran guerrilla leaders in an attempt to settle the war in that country through a peaceful political process, the Sandinistas have resisted all calls to meet with those who have taken up arms against them.

In an attempt to encourage the Nicaraguan leadership to opt for free elections, I supported an effort in Congress in October 1984 to suspend a decision on aid to the contras until this spring. In this way, we in Congress hoped that the United States would be sending Nicaragua a positive signal favoring democracy and nonintervention.

We had hoped that, with genuine elections, the Sandinistas would finally have begun the process of coming to terms with their domestic opposition. The Sandinistas did not take advantage of this opportunity. Instead, they have continued to consolidate the power they have—power that comes from the barrel of a gun.

The search for peace in Central America requires firmness, flexibility, realism and intelligence. Those of us in Congress



Salvadoran soldiers receive instruction on the M29 81-mm mortar from members of the 1st Battalion, 7th Special Forces Group, at a Honduran training camp.



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Salvadoran infantry trainees learn about the M16A1 rifle from a U.S. Army instructor.

who have been firm supporters of the contras understood the need to take that extra effort in the cause of peace. That is why we decided to postpone the decision on aid to the contras. Tough decisions must be made.

The controversy over Central America is the first major national debate over foreign affairs since the Vietnam war. In the years to come, decision makers in Washington and the American public in general would do well to keep the following thoughts in mind.

First, while Vietnam was not crucial to American security, Central America is. If the American public does not want another Vietnam, neither does it want another Cuba or Iran.

Second, it is important to realize the new foreign policy environment in which the United States finds itself. An assertive Congress, an aggressive press and a new alternative foreign policy establishment (made up of "dovish" academics, church groups and various human rights organizations) will make it more difficult in the future for the executive branch to come to a consensus on controversial foreign policy issues.

The American public will be predisposed against involvement by the United States in the affairs of other countries in Central America unless a clear and compelling case of national interest is made evident. Any Administration trying to put together a plan of action will have to make sure that: its plans are sound; they are explained in an honest and convincing fashion to the public (there can be no "credibility gap" as in Vietnam); and any course of action requiring the use of American combat troops be undertaken with the firm understanding that the most crucial limitation will be time.

Americans are an impatient people. Grenada illustrated that the American public will support military action, as long as that action is successful and is accomplished within a short period of time.

Let The Hunt Begin

As deputy community commander of Germersheim military community, West Germany, in 1974, one of my principle duties was "bird-dogging" traveling dignitaries who were visiting nearby Seventh U.S. Army headquarters. Occasionally, one of the visitors would request an opportunity to participate in seasonal boar, deer or bird hunting with our local German hunting club.

Anyone who has visited or served a tour in West Germany knows that strict hunting protocol exists and embarrassment can result from visiting hunters making mistakes. I knew, then, that German-American relations were on the line when I was asked to escort Maj. Gen. Marvin D. "Red" Fuller, then commander of the 1st Infantry Division, on such a hunt.

I kept visualizing my career on the rocks should Gen. Fuller somehow fire out of turn or shamefully aim at a deer with a good rack of antlers. Fortunately, my fears were allayed when, as the hunt began, the general slipped his hunting rifle from a case, turned to his aide-de-camp and announced in a voice loud enough to be heard by all present, "I shall only need one bullet today." Obviously the general had hunted with our German allies before.

LT. COL. DAVID P. WILLIAMS
U.S. Army, retired

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THE MAN WHO KILLED HAPPY HOUR



Let us get something straight. I enjoy wine with a meal. I enjoy an occasional mixed drink. I will have a beer at the ball game. Then why did I kill the great American institution of happy hour? That is a long story.

My first assignment after medical training was as the division psychiatrist for the 3rd Infantry Division (Mechanized) headquartered in Würzburg, West Germany. Drug and alcohol abuse were areas in which I was interested. Those who remember the early 1970s know that drug and alcohol abuse created serious health and morale problems which had a significant adverse effect on readiness.

One of my earliest observations was that the club system thrived on the promotion of alcohol. Every club had a happy hour and there seemed to be an ongoing price war: at one club, for example, drinks were two for the price of one; at another, mixed drinks were 25 cents and beer was a dime; at still another, all drinks were not only half price but were also doubles.

This was obviously wrong. What was the message that the Army was sending its people? It is difficult not to agree that a clear statement is made by emphasis on abundant and inexpensive alcohol.

The message is simple: alcohol is the key to pleasant social relationships. We call alcohol a "social lubricant," so it makes sense that a good time is impossible without adequate lubrication. The not-so-subtle implication is that alcohol is not only good, but that relatively high levels of ingestion are desirable. The more alcohol a person consumes, the happier the hour becomes.

For generations, the Army winked at alcohol, ignored the wages of its abuse and dealt with its victims in draconian fashion; that has all changed and this is the inside story of how the service was nudged along the road to an 'alcohol-neutral' position.

By Col. Edward K. Jeffer

Ancient man considered wine and li-uor special gifts from the gods because ıey made humans feel good. This atti-ıde, with relatively minor inroads, has ›me down to us today. America has ng been an "alcohol-positive" culture. ur literature, films and television shows ıve invariably shown happy and social-adept people with drinks in hand.

Prohibition and the efforts of the Wom-'s Christian Temperance Union can be entified as exceptions to the rule. Usual-, hosts are concerned if their guests do ›t want drinks and they expend a great al of energy ensuring that everybody ts a refill immediately. Only in recent ars have we seen any serious attempt use public service messages to coun-act this tidal wave of alcohol-positive aterial.

The Army has long struggled with one ecial aspect of the alcohol-positive atti-de. The ability to drink heavily has be-me synonymous with toughness and ısculinity. American culture has fos-ed this idea—from the western hero ıo downs a bottle of whiskey as the esthetic of choice for the removal of a llet to the hard-bitten but lovable ser-ınt who drinks the recruit under the le to prove who is the better man.

Recently, I watched a film made for teen and young teenage audiences. e high school hero and the smart-aleck ege boy decide to prove who is tough-How? They each quickly drink a six k of beer and then go on a spinning usement park ride until one (the loser) nits—a charming role model for pre-ns.

xamples of the institutionalization of ›hol—drinking contests, beer busts, motion parties—in the armed forces und. For years, every armed forces had its dice to allow gambling for ıks.

everal months ago, a young man was ıed to an emergency room with a quarter lodged in his esophagus. The newest drinking contest involves the attempt to flip a quarter into a glass of beer. If the soldier succeeds, his opponent has to chugalug the beer. The unfortunate young man in the emergency room had also chugalugged the quarter. It is obvious that happy hours are the tip of the iceberg and that the military's difficulties are simply a reflection of American society at large.

Consumer Reports estimates that, in the United States, the costs of problem drinking from accidents, crime, damaged health, lost productivity and early death exceed $43 billion annually. The General Accounting Office (GAO) in 1976 reported that "in the Army, 32 percent of the enlisted men and 20 percent of the officers are either heavy or binge drinkers; an additional 35 and 17 percent, respectively, have drinking problems."

Another interesting way of conceptualizing the problem is a study by doctors at Lyster Army Hospital, Ft. Rucker, Ala. They reviewed all hospital admission and emergency room visits (except pediatric and obstetrical patients) for one month.

Overall, 17.1 percent of the total number of patient admissions were alcohol related—26.8 percent of the males and 9.2 percent of the females. Of the 1,345 adult emergency room patients, 32.9 percent of the males and nine percent of the females were seen for alcohol-related problems, an overall rate of 20 percent. These findings were consistent with several similar studies done in civilian hospitals.

Maj. P. D. V. Gwinner of the Royal Army Medical Corps, writing in 1975, analyzed the social characteristics of military communities which could enhance the possibility of alcohol abuse. He delineated five areas:

■ *Hierarchical and demanding conformity.* Here he included the pressure to be "one of the boys." The inability of subordinates to express resentment to superiors promotes the use of alcohol for its relaxing effect, which allows an individual to "feel free for a space of time."

■ *Paternalism.* The alcoholic is fed and clothed almost indefinitely despite decreasing performance. While on active duty, he will never hit rock bottom, which most workers argue is essential before true change can take place. Also, a great deal of alcohol abuse is excused by the "work hard, play hard" philosophy.

■ *Permissive attitudes toward availability of alcohol.* As Eric C. Ludvigsen noted in ARMY ("Alcohol Abuse in the Army: New Campaign Against Tough Old Adversary," July 1977), "In European armies of the 17th and 18th centuries, a keg of rum or ale was an essential tool of command." Similarly, the seaman's tot of rum was once considered a necessity, considering the appalling conditions of military life.

■ *Mobility.* Most people feel some strain with a change of residence to a distant city. Couple this with a change in job and possibly in life-style; add prolonged loss of stabilizing family and personal ties; and the tension-easing, euphoria-inducing pseudocamaraderie of alcohol can become very attractive.

■ *Absence of women in the military work force.* While this is changing, the military is still a strongly masculine environment, redolent of the locker room and, in the past, the stables. Barracks behavior is a synonym for the coarsest kind of wit, and folk wisdom tells us: "Don't trust a man who won't drink with you."

Alcohol problems have always existed in the Army. At one point during the Indian wars, 28 percent of all discharges were alcohol related. It is interesting to note that at this time there was so much traffic in ethanol and other more toxic substitutes for methanol that the Army went into the alcohol business, which eliminated impure and poisonous sub-

stances but firmly established the Class VI store as part of the Army way of life.

From 1907 to 1917, hospital admissions for alcohol problems were 16 per 1,000 troops a year. During the prohibition era (1920 to 1930) the rate was seven to eight per 1,000 troops per annum. Interestingly, with repeal of the Volstead Act and the end of prohibition, the rate dropped to 3.3 per 1,000 troops. One hypothesis suggested by Col. Nick Rock, former psychiatric consultant to the surgeon general, focuses on the improved quality of the troops:

> During those depression years, many wanted to join the Army. Due to competition, selection criteria eliminated many high-risk individuals and the Army raised the previous low IQ requirement to average. Because of the small Army, there was less turnover of personnel which resulted in job and assignment stability and generally less personal stress.

During World War II and up until 1970, alcohol-related diagnoses accounted for 1.7 admissions per 1,000 soldiers a year. The size of the problem currently facing the Army is suggested by the following statistics for a one-year period developed from self-report surveys:

- 70,000 problem drinkers struck someone, one or more times.
- 187,000 awoke the morning after with a lapse of memory from the night before.
- 125,000 are unable to stop drinking until they become drunk.
- 264,000 were sick because of drinking.
- 19,000 soldiers were reported arrested for driving while intoxicated.
- 19,000 soldiers were hurt in alcohol-reported crashes and 8,000 in drug-reported crashes.
- 16,000 soldiers caused injuries to others or damage to property because of drinking, and 61,000 more injuries were drug related.
- 185,000 soldiers came to work with a hangover at least once.
- 87,000 soldiers were drunk or high once; 78 percent of these were high two or more times at work.
- 90,000 reported being high on drugs at least once.
- 44,000 soldiers drank within two hours before work; 99,000 drank during breaks; 18,000 drank on the job.
- 430,000 soldiers drank eight or more beers in one day.
- 248,000 soldiers drank eight or more glasses of wine in one day.
- 357,000 soldiers drank eight or more shots of hard liquor in one day.

A further problem in developing an accurate statistical base is the punitive atmosphere that persisted in the military for so long. Maj. L. J. West, an Air Force psychiatrist, writing in 1955, noted:

> The irresponsibility that often comes with chronic alcoholism cannot be tolerated in an effective modern military organization. Thus, punitive regulations have been evolved which place chronic alcoholism on a par with criminality and sexual perversion, subjecting the alcoholic to discharge without honor as unfit. No provision is made for treatment. In fact, hospitalization for alcoholism is "bad time" during which the patient's pay ceases. When unofficial acceptance of heavy drinking coexists with strongly punitive official policies, a situation arises in which it is impossible to determine accurately the incidence of chronic alcoholism.



The signing of Public Law 91–616 in 1970 by President Richard M. Nixon did much to reverse this trend. Now, all federal employees with alcohol problems must be identified, treated in federally supported hospitals and rehabilitated before any administrative action such as job dismissal can take place.

The climate in the Army has certainly changed. Following the highly publicized treatment experiences of several public figures and professional athletes, the credibility of alcohol rehabilitation has increased dramatically. Today the Army continues with an enlightened, progressive approach.

This was not the case in 1972 in Würzburg, however. The warning flags went up rapidly. The division personnel officer (G1) was quick to point out that happy hour in Würzburg was the special preserve of Brig. Gen. Roscoe Cartwright. Almost every Friday afternoon, Gen. Cartwright would be at the Officers' Club, and his presence had inspired a large regular turnout. I was politely advised that it would probably be better to forget about it. I decided to attend one of these Friday happy hours.

What I found there was interesting. Gen. Cartwright relished the role of unofficial host and created a tremendously positive atmosphere of sociability and conviviality. It was obvious that any solution that decreased participation would not be kindly received. However, the general was not much of a drinker and, on the occasion I observed him, he nursed one drink for the entire evening.

Armed with the above information, I wrote a decision paper for the community commander outlining a series of changes to Würzburg's happy hour. I emphasized the value of social interaction for unit morale and cohesion, but pointed out the inherent support for alcohol abuse in current policies.

I suggested that the focus on Friday afternoons be shifted to a more family-oriented or couples-oriented atmosphere, that drinks be sold at regular prices and that a large free hors d'oeuvres buffet be provided. I acknowledged that, if attendance dropped, financial losses could occur but argued that it was worth it to move away from the emphasis on alcohol consumption.

The staff reaction to the decision paper was predictable. The G1 was generally supportive and other staff sections felt it had no impact on their operations. The area club manager forecast gloom and doom. Happy hour was as it had been since time immemorial. To change it was to go against the nature of the Army, if not the laws of the universe.

After discussion with the G1, we agreed that a presentation for Gen. Cartwright, although he would not normally have been in the chain of approval, was essential for the program's success. A formal briefing with a series of charts was prepared. Estimates of changes in revenue patterns and possible attendance patterns were forecast.

Gen. Cartwright liked it. He approved of having officers' wives and girlfriends attend. With his support, the program was approved by the community commander, Maj. Gen. Sam Walker, for a six-month trial period.

In conjunction with the G1, an aggressive publicity campaign was initiated. Letters were sent to every battalion commander and commanders of separate companies, detachments and so on. The so-

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COL. EDWARD K. JEFFER, M.D., is deputy commander for clinical services at the Army hospital, Ft. Campbell, Ky. He will assume command of the U.S. Army Medical Department Activity at Ft. Eustis, Va., this summer.

ial nature of the new Friday afternoons vas emphasized.

A quotation from Gen. Cartwright was ncluded supporting the concept and highghting its positive effect on developing ıose important informal lines of comıunication among division personnel. ommanders were asked to mention it at aff meetings and officer calls. Weekly yers were printed and distributed to reıphasize the buffet and the social naıre of the occasion.

The experiment was a success. With en. Cartwright's interest (and what proam ever succeeds without command terest?), the crowds grew larger. Word read and soon a high percentage of cilians in the community began to atnd. Dinner reservations at the club on iday nights became necessary.

At a time when most U.S. Army, Eupe (USAREUR), clubs were in financial ouble, the Würzburg club flourished. ıis could not have taken place without e interest and support of Gen. Walker, e division commander, 3rd Infantry Dision. The club became an institution, a rt of the way of life in Würzburg.

Based in large part on the interest I had shown in drug and alcohol questions, I soon left the divin to become chief of the Office of ug and Alcohol Abuse Control at 7th edical Command (then U.S. Army Med l Command, Europe) in Heidelberg, st Germany.

My experiences with the Würzburg opy hour never left my mind, and en it came time to revise the USARR supplement to Army Regulation 600– I worked with my counterparts at AREUR Deputy Chief of Staff for Pernel (DCSPER) to draft Annex A, which uld incorporate an "alcohol-neutral" ition for USAREUR.

was impressed then and continue to impressed by the cooperative attitude he majority of nonmedical personnel ose backgrounds would not necessariıdicate an understanding or appreciı of the problem of alcoholism. The l version of the supplement included lan for reaching the goal of an alconeutral culture:

Advertising that gives the appear- of encouraging the use of alcohol at er official or purely social functions hat associates alcohol consumption ı good soldierly conduct, masculinity, ininity, social success, sexual achieve- t or happiness will be avoided.

Reducing prices of alcoholic beverages below standard prices for any reason is prohibited.

- Events that appear to have as their main purpose the consumption of alcohol will be avoided.
- Offering alcoholic beverages as prizes is prohibited.
- Open or prorated bars at various functions will be discouraged.
- Straight drinks will be limited and discouraged. Club patrons will not be served two or more drinks at a time. Doubles are prohibited. No special solicitation for orders will be made just before closing.



- "Zombies" and similar strong alcoholic drinks are prohibited.
- Drinking competitions will be stopped and the participants refused service.
- Intoxicated patrons will be refused service and required to leave the facility.
- The availability of snack food at the bar is encouraged.
- Substantive food at the bar is required to be available.
- Soft drinks will be available and so advertised in facilities where alcoholic beverages are served.
- Officers of the day must check each facility to ensure that the policy for control of excessive drinking is being enforced.

In general, these strictures were observed and a more positive atmosphere was created.

Concurrently, of course, the emphasis on command interest in alcohol problems and the development of credible resources for rehabilitation rang in a whole new era in the military.

I am happy to report that I can shift the "guilt" for Annex A to several sets of distinguished shoulders. For although I provided the original draft, my successor, Col. John Follanshee, supported the document through its printing, and it could not have reached fruition without the support and encouragement of Lt. Gen. R. Dean Tice, then the USAREUR DCSPER; Maj. Gen. Marshall E. McCabe, then commander of the Army Medical Command, Europe; and, finally, Gen. George S. Blanchard, then commander in chief, USAREUR.

Since leaving Heidelberg, I have maintained my interest in and support for drug and alcohol problem resolution while not being involved directly. I had started the process of instituting the previously mentioned regulation at Ft. Campbell, Ky., when one morning I found a buck slip on my desk with a newspaper article attached.

Chief of Staff of the Army Gen. John A. Wickham Jr. had directed that the elements of Annex A be adopted Army-wide. The note stated that my action at Ft. Campbell was now overtaken by events and they hoped I was happy.

I have spoken many times on alcoholism to military and civilian groups. I emphasize my belief that there is no single medical problem that creates more human suffering and costs the government more than the abuse of alcohol. If any of my actions have moved the Army in the direction of alleviating this problem, even if it is one tenth of one percent, I would be delighted.

While I shrink from being unduly optimistic, we do seem to be making progress. The 4th Special Report on Alcohol and Health prepared in 1981 for Congress by the Department of Health and Human Services indicated that although alcohol consumption continues to increase, the rate of increase has slowed significantly. During the 1960s, Americans increased their drinking of alcoholic beverages by about 25 percent; in the 1970s, the rate of increase was only eight percent. Public service messages on alcoholism are omnipresent, and frequently yet another celebrity joins the list of recovering alcoholics.

To judge how far we have come, compare Army-wide prohibitions noted here to what was hailed by *The Washington Post* as a major breakthrough in 1976:

> The happy hours at Osan Air Base in Korea, for example, have been limited to one hour three days a week, rather than the previous one and a half hours seven days a week.

Recently, another newspaper clipping appeared on my desk. The State of Massachusetts has passed legislation against reduced-price drinks.

My wife is talking about having a sweat shirt made showing a soldier bayoneting a bottle of booze and the words, "The man who killed happy hour." I am beginning to like the idea.

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Of Command And Control

nd other things

By
Col. Frederick W. Timmerman Jr.

When another day is done, when the flag is down and the troops are at chow, I begin to reflect on some of the seeming paradoxes of our profession.

My musings center around a number of questions. Even though the Army is trying to do otherwise, why does it still use the technology represented by information processing systems primarily to increase the work load and keep tabs on those in the trenches?

Why does a unit's training evaluator berate the unit commander for his procedural transgressions, even though that commander beat the aggressor unit, rather than patting him on the back and offering wise thoughts on how he might tighten things up a bit?

Or, more to the point, why do most commanders appear and act more like managers than leaders, although it is widely known that leadership is a key ingredient if the Army is to succeed on the AirLand battlefield?

The problem that gives rise to these questions is in the Army's vision of command and control. It has become mesmerized, stuck and otherwise immobilized in its thinking on the subject. Many have come to see the terms as substitutes for one another—as synonymous and equal. If we have control, do we then have command?

In daily operation, the Army has become one of controllers rather than commanders. In the process, more managerial attributes than leadership behaviors are exhibited. This is, perhaps, satisfactory until commanders have to perform on the battlefield. Then the problems start, and the whole equation is seen for what it really is—not synchronized.

By focusing on control, Army leaders have developed habits which will be difficult, if not impossible, to break once the shooting starts. If only they can just find the right control or managerial tool, then they will have all the answers!

Sadly, Army leaders have stood on the hills of training areas from Ft. Irwin, Calif., to Hohenfels, West Germany, and have said to each other, "Why can't that commander get his stuff together?" The answer has always been right in front of them.

The commander on the training field is trying to react and pay attention to all the rules and control procedures that have been devised to help. Now this would not be so bad if Army leaders had also communicated that all policies are just guides and that the commander must still apply his own judgment.

Normally, the harder this hypothetical commander tries, the worse he does. If he does succeed and his effort does not match what the book says is supposed to happen, he is "eaten alive." Freedom to fail becomes the norm.

Command in a pure sense offers no hint of short-term perfection. Its goal is excellence and success in a world which can never be perfect. Although none have achieved perfection, many great commanders have achieved excellence. Their success has been gained by adjusting their operations to human and situational realities.

The problem with a control focus is that, rather than broadening command horizons, it acts to constrain leaders by fixing activity on what is quantifiable—statistics, reports and data. Moreover, because leaders do not generally get rewarded for something that is unquantifiable, they may not give it any attention. Thus, the command part of the equation suffers. S. L. A. Marshall cautioned against reliance on control when he observed in *Men Against Fire* (1947):

> Sixty percent of the art of command is the ability to anticipate; 40 percent of the art of command is the ability to improvise.

The first step toward helping Army leaders solve the control dilemma is to understand the differences between command and control. It is also necessary to understand how they affect leadership and management practices. Finally, the

'Command' and 'control' are so often spoken in the same breath as to endanger the distinction between the two—the former cannot work its magic without the functions of the latter; yet control is no substitute for imaginative leadership.

implications of a command or a control perspective for Army organizations must be appreciated in order to achieve a balance. Unless the Army can solve the command and control problem first, it does not stand much of a chance of making AirLand Battle doctrine work.

Each soldier has a vision of command. Formally, the exercise of command in the Army is vested in certain positions such as company, battalion or brigade commander. However, it is only when command is exercised through personal action that it becomes effective. In this regard, it has been noted that effective command cannot simply be compelled, it must be evoked, won, earned.

It is through people that command has its origins and ultimately gains its power. Further, it is through positive and successful outcomes that work for the common good of the force that those commanded willingly obey over time. When words and actions match, the commander is generally on safe ground, even though soldiers might not like what they are required to do.

When they do not match, it is the behavior of the commander that will govern how subordinates respond. The commander who says that he is not worried about deadlined vehicles and then hammers subordinates on the subject has just created a command problem and a potential ethical double standard.

Values undergird the exercise of command, but it is only through behavior and attitudes that they are made manifest. Command is the world of action, involvement and quality as opposed to quantity. Its characteristics are quality, low-volume communications throughout the unit; clear expression of tasks—no more detail than is necessary; an emphasis on success and rewards; a visionary outlook and a focus on tomorrow; and leadership by example to ensure movement in the desired direction.

In order to exercise effective command, a leader must exhibit three primary attributes: he must function concurrently as a transformer, a synthesizer and a standard bearer.

A transformer is an innovator who makes the unit an exciting and enjoyable place to work. Command from this perspective does not dwell on detail any more than is required to express the vision and establish the priorities required to achieve success. Further, a transformational perspective recognizes that units will never be perfect. The goal is excellence as a reasonable outcome.

A transformer possesses many skills, but he is first an involved teacher. Whether in the motor pool, in the dining facility, on a firing range or during a lull in combat, the transformer never misses an opportunity to teach or learn something new. Subordinates view the transformer as a person who will stand up for soldiers, develop them professionally and be firm when necessary.

The final characteristic of control—that it lacks moral force except for its natural drive for efficiency—is its least understood and potentially most dangerous feature.

Soldiers who serve with transformers feel they can take risks, fail and still retain the opportunity to win. Transformers focus on creating opportunities to succeed rather than focusing on the negatively oriented concept of "freedom to fail." They know soldiers like to win and they are mentors.

A synthesizer represents the visionary force of command. Commanders who possess this attribute have an uncanny ability to anticipate and pull things together, getting the most out of units by multiplying their effect.

The greatest benefit of the broadened perspective of a synthesizer is knowledge that coordinated actions can only occur when there is unity of effort. Labor, therefore, is expended on fostering unity through involvement, rewards and example rather than on producing confusing and sometimes contradictory policies.

A synthesizer understands that one cannot legislate behavior, it must be shaped. Gen. George C. Marshall put the matter in perspective when he observed that, "Army officers are intelligent. Give them the bare tree and then let them supply the leaves."

If transformers and synthesizers are important, standard bearers are absolutely critical. Leaders and commanders who exhibit this attribute are moral unifiers who, by example, pull the unit together, thus making it ethically a separate and superior system.

Being a standard bearer requires commitment to defending and living the tenets of the profession, safeguarding its traditions and passing them on in action, word and deed to those who follow. A standard bearer sets and demands adherence to standards which provide certainty in the face of confusion, direction instead of dogma and prescription, not proscription.

The goal of a standard bearer is establishment of shared values and creation of a community of trust where communications can flow in all directions. The following also occur:

- Correct ethical behavior is modeled as faithfully as possible.
- Every opportunity to reward and reinforce proper ethical behavior is exploited.
- Potential ethical dilemmas are reduced by eliminating questionable policies and directives.
- Responsibility for moral matters is not delegated.

When reflecting on the dimensions of command, it is no wonder that many are attracted to solutions that offer neatness and regularity. The end result of effective command is not certainty. Rather, it is a rich, varied human situation where soldiers think, act, achieve and accomplish the mission. Command is a messy, emotional business and it sometimes bruises the ego. It is, however, a flexible approach which is ultimately verified by battlefield success.

In contrast, the concept of control is a rather sterile one without ethical effect. It is like a weapon or a map, simply a tool of the trade. It is the user who gives control a bad name.

Control is an activity used by a commander to help shape his unit as he leads and commands. It serves to make it easier for him to gain the information he needs to transform, synthesize and function as a standard bearer.

Control is characterized by high-volume, routine communications; coordination of activities between elements inside and outside a unit having related respon-

LT. COL. FREDERICK W. TIMMERMAN JR., an Army War College Advanced Operational Studies Fellow, holds a Ph.D. from Duke University. He recently completed an extended tour of command of two tank battalions at Ft. Carson, Colo., and has served in various command and staff positions in Europe and Vietnam.

bilities; creation of a structure which elps limit matters demanding command cus; and the absence of any moral force cept for a natural drive for efficiency.

The thought that control is represented y high-volume, routine communications ggests its housekeeping function. There e certain recurring activities that must e counted, checked and surveyed so at resources can be allocated to service it needs.

A personnel status report is one such gh-volume, recurring activity. Without owing how many people are present, reasonable estimate of beans, bullets personnel availability can be generat-. It is only when such communications gin to drive the activities of the unit at they become problems.

Coordination, as a control characteris-, highlights those activities between els of the organization designed to en-re that like players are operating to-ther.

Intelligence summaries and fire sup-rt plans are two examples. These ac-ities are normal and guarantee that eryone is ready to support the concept operations. It is only when the detail quired or the frequency of activity be-mes the overriding aim that coordina-n destabilizes unit effort.

Creation of structure, as a necessary sitive activity of control, is self-evi-nt. Areas of operations specified by p overlays, contact teams that sup-rt units, and report formats are but ee examples of control structure.

Without such structure, there would be no base from which to allow one to begin to exercise respon-lity or to know the scope of activity. wever, problems occur when overlays done without appreciation of the sit-ion, when contact team standard op-ting procedures begin to drive the ac-ties of a unit, or when reports are not epted because of a format error.

The final characteristic of control—that acks moral force except for its natural e for efficiency—is its least understood potentially most dangerous feature. oday's Army, the concept of efficien-as gained a stature that would cause great military captains of history to able were they alive today. It is truly in too many quarters as an end in f. Some of its misplaced stature is de-d from the nature of peacetime oper-ns and the need to make good use of esources.

Army leaders must be prudent with their resources. What, however, is the Army's function? If it is, as most suggest, to be prepared to fight and win, then effectiveness, not efficiency, must provide the measure with which to gauge success.

Progress will become apparent when evaluation reports stored in the vast vaults of the Army's Military Personnel Center begin to reflect regularly three themes: competency to fight; service to soldiers, the Army and the nation; and the character to stand up for what is right for the Army as a whole.

Thus, effectiveness and efficiency have become conflicting concepts. As long as Army leaders continue to confuse their purpose, they will continue to tear at the Army's moral, operational and administrative fabric. Efficiency addresses form. Effectiveness suggests substance or total outcome. It directs attention to such concerns as battlefield success, keeping soldiers alive and using resources correctly. Effectiveness has moral force. Efficiency is amoral.

If one were to describe the ideal relationship between the concepts of command and control, it would be to liken them to the relationship of a rider to a horse. The commander is the rider and the reins are control. The horse is the unit.

If the relationship is one of harmony between horse and rider, a simple change in weight or a gentle tug on the reins is all that is needed to initiate action in the desired direction. If the horse and rider are not in harmony, the rider can use the reins vigorously, gain some measure of control and thus some action—but for how long? More important, how effective will the horse and rider combination be?

The practical problem is that, in the short run, the rider who uses control vigorously will appear to be more efficient and more effective. In contrast, the rider who simply uses the force of command will appear to be less efficient and thus less effective. There are those who would now say that the case for control has just been proved.

There are, however, too many variables to conclude that the rider who relied on control would get anything more than a flurry of activity, since he could not break the code and communicate his vision of where he wanted the horse to go.

Second, the continual use of control, as a tool, will lose its effect. There will come a point where it no longer can be increased sufficiently to sustain activity. The rider who uses little or no control, therefore, is the one who stands the best chance of generating some effectiveness and getting to his destination.

The same holds true for the application of the concepts of command and control to soldiers and units. With soldiers and units, the period of control effectiveness, particularly on the battlefield, will be of much shorter duration.

Those who have experienced battle identify chaos as its most persistent feature. A command attitude will offer some hope of dealing with chaos since, by nature, it is perceptual, conceptual, rational and subject-oriented in focus. In contrast, control is mechanically oriented and has no natural orienting feature except efficiency.

The foregoing suggests some important relationships between command, control and desired behavior. There is an inverse relationship between the concept of control and the reliability or predictability of behavior.

If a horse and rider are moving down a narrow corridor, the major problem in getting to the objective would be ensuring forward movement. Because of the corridor, the need for control would be less. Thus, the inverse relationship: the more reliable the behavior of soldiers and units, the less the need to resort to control.

There is also an inverse relationship between the concepts of command and control themselves. The idea of harmony between horse and rider mentioned in the analogy suggests a qualitative aspect to the problem. The greater the [illegible] of behavior which is understood, the higher the quality of the relationship and the less the rider has to resort to control.

The inverse relationship can be expressed as follows: the higher the quality of the relationships between soldiers and units and the commander, the less he tends to resort to control as a tool. In the extreme, where the intent of the commander has been fully internalized by those commanded, formal controls can be superfluous, even counterproductive.

Viewed another way, command and control are relational concepts. Control serves as a compensating device for command to deal with the unpredictable aspects of a situation. It is a tool to be used only when the perceived limit of effective command is exceeded.

Where command is of high quality, control is potentially useful because its use is truly the exception and it can have impact. When command is of low quality, the probability for the use of control is high. It is seen as a way to reduce risk and becomes exceptionally routine.

There are those who might argue that this discussion says nothing about the information needs for effective operations on the AirLand battlefield. In reply, it can be argued that it has everything to do with the issue. A presumption that command quality is low gives rise to the requirement that reports are due on a routine basis—for example, every four hours. A presumption of high command quality gives rise to different outcomes —for example, a report every time unit strength drops ten percent.

Where in the Army do commanders require reports routinely on the latter, by exception, basis? Put another way, this explains why so many commanders are prone to developing complex rather than simple plans. Belief in quality is driven down because of doubt in ability to deal with risk, the one factor inherent in all that military professionals must do. Use of control rises although the only real path to excellence and simplicity is command.

To be optimally effective with soldiers and units, there must be a functional component to each of these concepts. Enter leadership and management. Leadership, it is generally agreed, infers some sort of influence process where one person acts to get another to accomplish a task. Leadership suggests interactions between people for specific purposes and is mission related. A commander does not lead a weapon, he leads the soldier who operates the weapon.

Management, in contrast, suggests the handling of things for specific purposes which may or may not be mission related. Commanders do speak of managing soldiers, but they usually mean doing something to, for or in behalf of soldiers.

How do the four concepts, command, control, leadership and management, fit together? Unfortunately, the concepts are grouped together as parallel, relational and functional concepts—command and control, leadership and management. Further, only limited links are established between the two sets of concepts. This conceptual compartmentalization is wrong and obscures the real nature of the relationships.

Command and leadership, control and management should be viewed as the real operative relationships in the Army. Once this occurs, Army leaders can begin to resolve the control dilemma and balance the ledger. Command is the desired result and leadership is the primary means. Control is the adjunct to command and management is its means.

As Chief of Staff of the Army Gen. John A. Wickham Jr. noted in the 1984–85 ARMY *Green Book*, the Bradleys and Pattons are out in the trenches. The concern that many professionals have is that, when they are required to step forward, they may not have sabers long enough and sharp enough to cut through the red tape, branch jealousies, piles of policies, bloated staffs and bureaucratic minefields to take command and lead the Army to victory.

What can be done to redress the command and leadership, control and management problem? There are many activities under way that attempt to hold the line. But until the three groups—the leaders, the led and the organization—that together make up the Total Army roll up their sleeves, put aside politics and personal interests, and get to the task at hand, progress will not be made.

The tasks for leaders can be divided into two groups. For those in senior positions, efforts must be directed toward simplifying Army operations, establishing shared values which promote a warrior ethic and taking efficiency risks to build effectiveness. In the process, the effect must be reduced policies and paperwork, smaller staffs and decentralized responsibility.

Junior leaders must have the desire to assume responsibility and the will to improve themselves. If both ends of the leadership chain begin this effort together, the result could be a realignment of professional attitudes. The goal for both groups would be to achieve a unity of command and leadership purpose.

Subordinates have a responsibility to ensure that they have the skills required to win and the loyalty to support their leaders. To reduce the pressure for the use of control tools and management practices by leaders, subordinates must dedicate themselves to individual development, competency and support for the unit's goals.

The Army organization bears responsibility for establishing and sustaining a common cultural community. This means maintaining an environment where all share a common vision of what needs to be done, possess the attitudes that impel action and have common values. To do this, everyone must work to ensure that individual units do not see themselves as special interest groups loyal only to themselves.

The U.S. Army must be an elite army where all groups see themselves as part of that winning elite. Only in this way will commanders and leaders feel comfortable leading rather than managing or controlling. The effect will be trust, a reduction in careerism and less need to hold personal ambition in check.

Fortunately, a general preoccupation with only one of the four concepts—control—is a chronic problem the Army's potential adversaries possess. If Army leaders can avoid falling into the same trap, then there is no doubt that they can defeat any enemy attack.

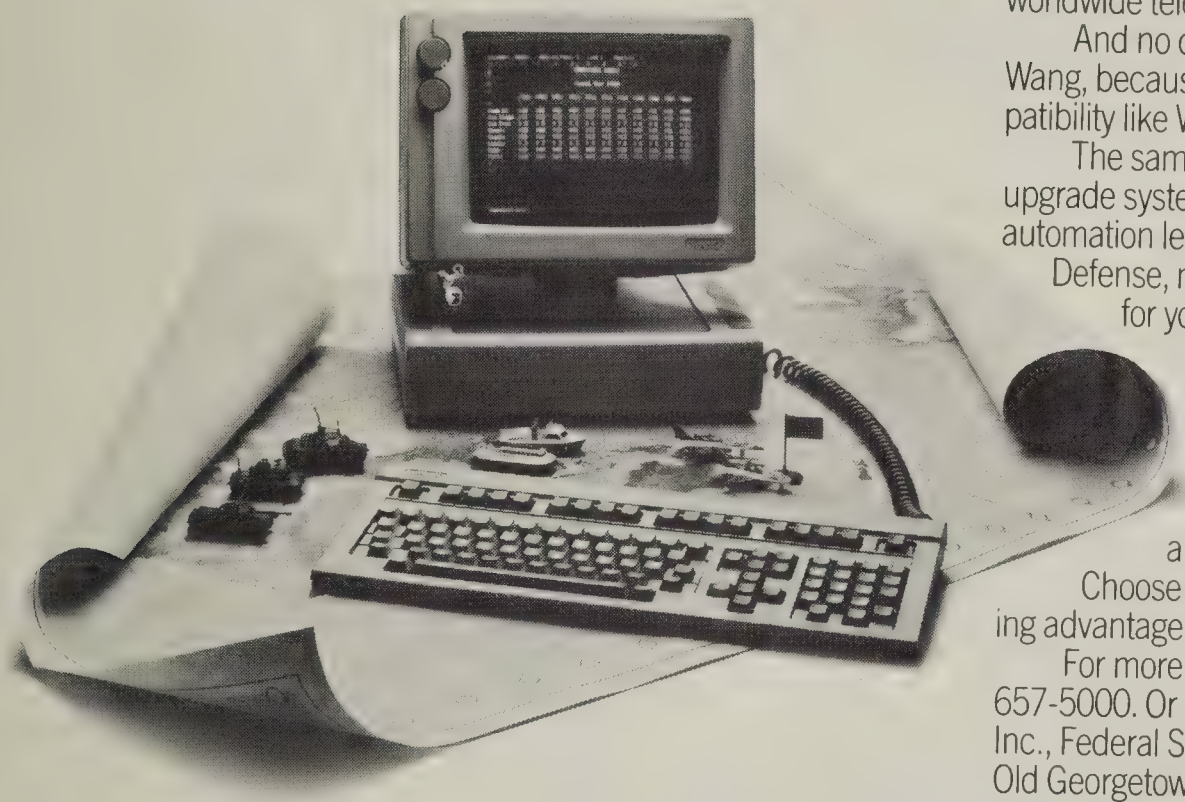
In a larger sense, the Army will have the vision to sustain its capability as an instrument of national policy to face any threat resolutely and victoriously. This nation's adversaries are already at the control culminating point. The Army is slowly working its way there with its technologically driven appetite for management practices and control tools.

In a world of technical sophistication, man is the most important target and the most important resource. He must be led and commanded in order to win.

In the final analysis, actions are what matter. What is needed now is for Army leaders to get out of their offices and take risks, learn and act.

This is a tall order, given established behaviors, but it is never too late to start. Progress will become apparent when evaluation reports stored in the vast vaults of the Army's Military Personnel Center begin to reflect regularly three themes: competency to fight; service to soldiers, the Army and the nation; and the character to stand up for what is right for the Army as a whole.

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eneration Ahead of Their Time

Civil War Machine Guns



By Konrad F. Schreier Jr.

The hand-operated machine guns used by the Union Army in the Civil War were years in front of contemporary tactical thinking and they represented a remarkable technical achievement, given the primitive ammunition of the day.

he Civil War led to the wide acceptance of modern weapons which began when the U.S. Ar- introduced the first practical military eating firearm. This was the cap-and- Colt revolver made for and used in Mexican War of the late 1840s. Its ess inspired Colt to produce not only roved model revolvers for the Army, also the Colt cap-and-ball revolving . When the Army adopted it, albeit imited numbers, it became the first tical repeating rifle used by any armed e.

lthough the cap-and-ball Colt revolv- firearms had their faults, they had combat-proved by the time the Civ- ar began. During the war, their suc- inspired inventors to contrive more better repeating rifles and pistols, led them to invent the first machine . The Army was offered many ma- e gun designs, but only three were d to troops in the field.

ne first was the Union Repeating Gun, irst machine gun ever fired in com- The second was the Billinghurst– ia battery gun, the first machine gun e properly employed in combat. The was the Gatling gun, whose basic operating system was so efficient that modern versions of it are in use today.

All three guns were produced by civilian inventors trying to make a contribution to the Union cause. They all had the same idea in mind: to produce a weapon which would have the firepower of a company or more of infantry.

Machine-gun inventors had to surmount great difficulties. Breech-loading firearms were in their teething stages and ammunition suitable for machine guns did not exist. They needed metallic cartridges, which were invented in the 1850s and were not perfected until the end of the war to the point where they were suitable for use in machine guns.

Into this transition era in firearms stepped a couple of ingenious New York inventors—Wilson Ager and William Palmer. They created their machine gun by using the mechanical system of the revolving pistol, thus making it into a crank-operated gun. They fitted its cylinder with slots into which ammunition could feed from the side instead of from the front or back.

To fill the cylinder slot they provided a combination cartridge-firing chamber loaded with the standard Army .58 caliber muzzle-loading paper cartridge and primed with a standard Army musket

A Billinghurst–Requa battery gun and its ammunition limber, manned by troops of the 39th Illinois Volunteer Infantry on Morris Island, S.C., during the siege of Fort Wagner in Charleston Harbor, summer, 1863.

Photo via Kenneth F. Baum

percussion cap. They called their perfected invention the "Union Repeating Gun." Actually, the weapon looked like a cross between a small field gun and an old-time, hand-cranked coffee mill. It quickly became known as the "coffee-mill gun."

The gun was first demonstrated in the fall of 1861, less than six months after the Civil War began. The problems of selling it to the Army came in the midst of a rapidly escalating war. Any direct approach to the 100 or so officers of the U.S. Army Ordnance Department was impossible—they were overworked just keeping up with the needs of the rapidly expanding army.

The gun was entrusted to two successful New York businessmen, Simeon Draper and Orison Blunt, who got J. D. Mills, a successful salesman, to promote it. Mr. Mills interested Maj. Gen. Benjamin F. Butler in the gun, and eventually the weapon was brought to the attention of President Abraham Lincoln. After many trials and on the recommendation of Maj. Gen. George B. McClellan, President Lincoln ordered the purchase of 50 Union Repeating Guns on 19 December, 1861. This was the first machine-gun order ever issued by any government.

Union Repeating Gun manufacturers had anticipated the order and were able to deliver the first guns quickly. On 29 March, 1863, two of the guns, in the hands of Brig. Gen. John W. Geary's 28th Pennsylvania Volunteer Infantry Regiment, were fired for the first time in a skirmish with the enemy near Middleburg, Va. There were no developed tactics for machine guns at that time so they had been fired as if they were field guns.

In all, some 75 Union Repeating Guns were procured and, although they were still in service at the end of the Civil War, a number of things conspired to keep them, or any machine gun, from becoming popular during that war. Few soldiers knew how to use them to best advantage, and all too often they were employed as light artillery for their field gun canister effect. Also, the Army had no means of providing trained operators.

The Union Repeating Gun had a problem of its own, too—when cranked to fire a hundred or so rounds a minute it worked perfectly but when cranked faster it jammed. Getting a gunner to maintain the proper rate of fire in action proved a difficult fire discipline problem. As a result, the gun gained a reputation for unreliability that it probably did not deserve.

While the Union Repeating Gun was becoming the first practical machine gun fired in combat, the Billinghurst–Requa battery gun was in the final stages of development. During the first few months of Civil War arms development, many changes occurred; and the Billinghurst–Requa was designed to fire metallic cartridges. It consisted of an assemblage of 25 barrels mounted in a flat array and was loaded by long clips of 25 cartridges fired in a salvo by a single double-strength cannon percussion cap.

This gun, like the Union Repeating Gun, was the size of a small field gun like the mountain howitzer. One unusual feature was a mechanism which made its barrels fan in and out like the toes on a foot so the amount of front the gun's fire would cover could be varied. In modern machine guns this is done by traversing.

A battery of Billinghurst–Requa guns was employed in operations at Charleston Harbor, S.C., in the summer of 1863. The guns had been well proved by then, and several were used effectively in the siege of the Confederate Ft. Wagner to give covering fire for Union engineers who were building approach parallels.

From a series of well-sited positions, coordinated with light field artillery fire, the guns prevented the Confederates from taking any effective action against the approaching Union engineers' entrenchments and Ft. Wagner fell. While this was the first action in which machine guns were used in what may be considered a proper and effective manner, unfortunately this use of the Billinghurst–Requa battery guns was not well recognized or understood at the time. Later, the effectiveness of the Billinghurst–Requa guns was attributed to their proper positioning in *enfilade*, their ability to spread fire over a wide front and the fact that they were manned by skilled crews who could fire them at a sustained rate of 100 to 150 rounds a minute.

Although the Billinghurst–Requa could fire bursts of 200 or more rounds a minute, the manipulation of its long 25-round clips and its somewhat clumsy breech were not the most practical answer to the machine gun's mechanism. The guns remained in service until the end of the war, but they were never again used as effectively as they had been in Charleston.

While the Billinghurst–Requa was undergoing its first combat trials and proving its worth, what is perhaps one of the best machine-gun designs of all time was being developed—the famous Gatling gun. This remarkable gun was the brainchild of Indiana doctor of medicine and inventor Richard J. Gatling, and it is a mechanized version of the revolving pistol. While he had formed his basic idea in 1861, it was not until the summer of 1862 that he had a firing prototype to demonstrate.

Like all Gatling guns, the prototype consisted of a revolving assembly of barrels each with its own breech mechanism. Unlike later models, however, it used a percussion-primed cartridge-firing chamber like the Union Repeating Gun, loaded with the regulation .58-caliber paper muzzle-loading cartridge.

Dr. Gatling promoted his gun with the claim that one had the firepower of a full company of infantry. It did. It could fire 250 to 300 rounds a minute for several minutes at a time. That was easily as much as any company of 100 officers and men could hope to fire with muzzle-loading rifles.

Although he had to struggle to do it, Richard Gatling finally raised enough financing and support to build a small number of guns. As he did so, advances in arms technology caught up with his original prototype design. The self-contained metallic military rifle cartridge had been developed to the point of being practical for the new Spencer repeating rifle and carbine.

Before building his production guns, Dr. Gatling adapted his design to fire the brand new .58-caliber rim fire metallic rifle cartridge. He did this by simply drilling out the end of the chamber to accommodate the breech-sealing metallic cartridge and by modifying his firing pin system to fire it.

The Gatling received a nearly fatal setback when, in early 1863, the factory that had contracted to manufacture it was destroyed by fire. Fortunately, another contractor was found and by May 1863, the first production run of thirteen .58-caliber rim fire Gatlings had been completed.

Since the gun had been changed to fire a brand new ammunition system—the .58-caliber rim fire in a firing sleeve—

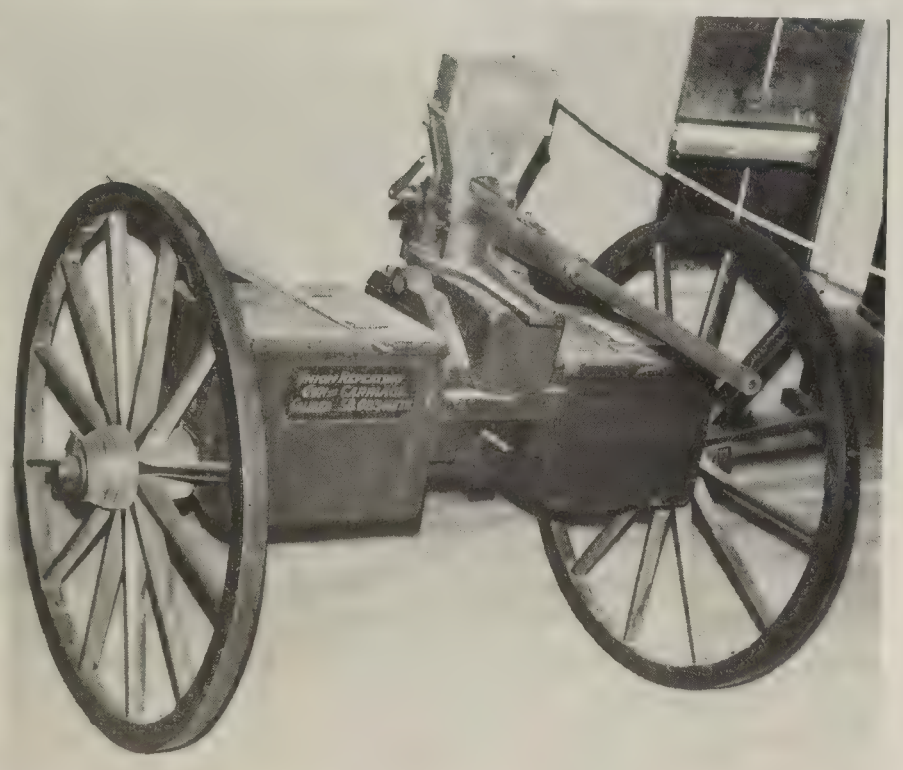
KONRAD F. SCHREIER JR., who served in the U.S. Army Ordnance Department and attended the Army Ordnance School in the 1940s, is the author of several books and more than a hundred articles relating to weapons and ordnance history. He is currently preparing a history of early Army machine guns.



U.S. Marine Corps Museums

his surviving example of the Billinghurst Requa battery gun (above) is in the Marine Corps Museum and is in working order. The Union Repeating Gun (right), the first practical machine gun ever purchased by any army, is in the collection of the Springfield Armory National Historic Site.

This Model 1862 Gatling gun (below), in .58-caliber rim fire, from the first production run, saw limited use during the Civil War.



Springfield Armory National Historic Site



Springfield Armory National Historic Site

more testing was required before the Army would accept it. Tests were fired, but the Army still was not ready to procure the guns.

Brig. Gen. James W. Ripley, chief of ordnance, had been waging an implacable war to prevent excessive numbers and types of assorted nonstandard arms from going into service, thereby complicating the depot and field logistical problems. He had also opposed both the Union Repeating Gun and the Billinghurst-Requa battery gun.

Ever eager to try out new weapons, Gen. Butler came forward to save the Gatling. He purchased the guns for his state's volunteer troops, all 13 of them. The guns did not get into action until May of 1864 when Gen. Butler himself fired a few rounds in the general direction of enemy lines. From that time until the end of the Civil War, the early model Gatlings were fired in action a number of times but never in a notable battle or with memorable effects. They were used in some places in Union lines in the siege of Petersburg, Va., which led to the end of the war.

The use of the Gatling also suffered from a lack of trained crews and its field-gun size. Also, Confederate troops had learned to avoid them, which was not hard because of the gun's limited numbers.

Despite everything, the Gatling gun quickly proved to be a highly satisfactory weapon, far better than the Union Repeating Gun and the Billinghurst-Requa battery gun which were in service with it. The Gatling was stronger, more reliable, faster firing and very effective.

The Gatling survived despite the fact that it, the Union Repeating Gun and the Billinghurst-Requa battery gun were never officially adopted by the Army, although they were in use at the end of the Civil War. They fell into the category of nonstandard weapons and were so few and scattered—there were never 50 in the hands of troops at any one time—that supporting them was always a problem. There was no Ordnance Department provision for maintaining them, the Army had no provision for training crews to man them, and, possibly worst of all, they consumed large quantities of nonstandard ammunition.

Changes in the Ordnance Department altered the outlook and future of all new and improved weapons. Gen. Ripley retired as chief of ordnance in late 1863. Col. George D. Ramsay was placed in charge of the Ordnance Department and



The .50-caliber Model 1866 Gatling was too late for the Civil War, but some of the original 50 were still in use nearly 40 years later, like this example seen in the Philippines in 1901.

Author's collection

was then made acting chief of ordnance. While Col. Ramsey got the job done, he was considered an interim appointee. He was somewhat more receptive to new weapons than his predecessor, but he did little to advance them.

On 12 September, 1864, Alexander B. Dyer was appointed brigadier general and chief of ordnance. Gen. Dyer, a foremost Ordnance Department engineer and executive, had advocated improved weapons throughout his career. He played an important part in the Army's adoption of rifled muzzle-loading field guns in 1860 and had designed one of the first successful projectiles they fired. He had been involved with the development of Civil War machine guns from the start and believed they were a type of weapon necessary to the future.

Gen. Dyer commanded the National Armory, Springfield, Mass., from 1861 until he was appointed chief of ordnance. While there, he had been involved in the development and testing of new small arms which fired metallic cartridges and pronounced them the weapons of the future. He encouraged Richard Gatling in the development and improvement of his gun, and helped him adapt it to metallic cartridges.

In 1865, Dr. Gatling built and tested a number of new guns, one of which fired the Army's then experimental .50-caliber metallic rifle cartridge. Another fired a powerful one-inch metallic cartridge. Both of these Gatling guns were of a design that eliminated the need for the cartridge carrying sleeve, and both were recommended for adoption.

Richard Gatling had redesigned these guns with a long stroke breech system to eliminate the need for the cartridge sleeve. After extensive testing during the last days of the Civil War, the Army decided to adopt the new Gatlings officially. This design has been used on all Gatling guns since 1865.

In 1866, money was provided for an order of 100 new model Gatlings—50 in .50 caliber and 50 in one-inch caliber. These Model 1866 Gatlings were the first machine guns officially adopted by any army in the world. They were excellent guns and, although many newer models were procured by the Army during the next 40 years, a few of the original 100 were in the hands of troops who fought in the Philippine Insurrection after 1900. Despite problems with old ammunition, the Gatling guns served effectively until replaced with newer models.

The Army's Civil War machine guns are, like much in ordnance history, an obscure subject, but they had a tremendous influence on arms development. Only a half dozen or so have survived in museums.

Over the years, the Army has sometimes suffered abuse for its conservative attitude toward new weapons. However, the Civil War machine guns are only one of the many ordnance firsts pioneered by the U.S. Army—a service which has more claims to such firsts than any other army.

And Amen!

During the Battle of the Bulge in December 1944, there was little opportunity indeed to do any cooking. Being the improvisers American soldiers usually are, many in our armored infantry company found a solution to the problem by heating their cans of C-rations on the engine manifolds of our half-track.

One of the privates in the half-track to which I was assigned never ate without first giving a blessing, however brief. Once, in the heat of battle, after he had cooked a can of beans in the manner mentioned, he simply said, "Thank thee, Lord, for thy manifold blessings."

C. R. Reagan

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Y MAJ. GEN. A. S. NEWMAN

xperience: The Best Teacher

Experience has many meanings, but its significance as a way of learning is undisputed. Consider the lessons I learned from the following convoluted experience during World War II.

After our corps-level task force, under Sixth Army, ›tured the Hollandia airfield complex in New Guinea 1944, the 24th Infantry Division settled down to pare for our next operation. As division chief of ff, I received reports on the subsequent amphibious ack on Biak Island, about 300 miles farther west. e word was they were having problems.

When a courier returned from Biak in one of the rine amphibious planes based in nearby Humbolt , it seemed I might wangle a trip there, too, and n things of value for our next operation. My divi- commander said, "Okay—if you can get permis- from higher headquarters and the plane ride."

o I called the corps chief of staff who said, "Okay, , arrange your own transportation." It was about P.M. when I contacted the headquarters of those hibious planes by phone. Yes, a plane was leaving Biak that night and there was a seat for me.

welve hours after I got that bright idea, my plane led offshore from Biak and taxied to the beach. re the chief of staff, 41st Infantry Division, was . Kenneth S. Sweany, whom I remembered most santly from our days in the same company at the . Military Academy, West Point.

Ken took me in to meet the division commander, Maj. Gen. Horace H. Fuller, who said I could go anywhere and look at anything of interest to me. I also met the assistant division commander, Brig. Gen. Jens Doe.

Then, after a briefing on the combat situation, Col. Sweany equipped me with a jeep and driver, said, "You are now on your own," and returned to his pressing duties.

Maybe I had permission from proper authority to be there but, obviously, my presence was on the pushy and brassy side. However, I was never treated anywhere with more professional and personal courtesy.

Biak was densely wooded with tropical forests, virtually uninhabited, but was far more heavily garrisoned and strongly defended than anticipated.

What gave it military significance was its strategic location and Mokmer airfield, constructed near the sea by the Japanese. The battle problem stemmed from the way Mokmer was guarded by the sea on one side (no landing beaches), and on the land side by a crescent of wooded hills of limestone formations, honeycombed with caves, which the Japanese had developed into a fortified area.

American forces landed on Biak's beach nearest Mokmer airfield, and attacked toward Mokmer from two directions. One regiment advanced along a narrow dirt road, with the sea on one side and steep cliffs on the other. The second regimental attack was inland, through the jungle toward those protecting hills.



A U.S. tank-infantry column moves out in search of remaining Japanese resistance in the Hollandia, New Guinea, area in early May 1944, about a week after the airfields there were secured; the Biak landings were three weeks away.

As my first combat "kibitzing" effort, the jeep driver headed down that narrow seaside road, where I soon saw the stark realities of what was referred to vaguely from hundreds of miles away as a "problem." It sure was.

The primitive road bordered the sea on one side and was hemmed in by wooded limestone cliffs on the other. The principle of fire and movement in a coordinated conventional attack was impossible. It required laborious digging out of dug-in defenders with patience, determination . . . and casualties.

The next day I visited the regiment taking the inland route, over the cliffs from the beachhead and through the jungle toward the hills guarding Mokmer airfield. There was no road, not even a native trail, but this was a "military first"—the drive was led by a bulldozer, traveling on a magnetic azimuth to those cave-studded hills around Mokmer. Also, because of the unique geologic formation of Biak, there was no water source available. Water had to be transported from the beachhead—an unforgettable example of a universal, mandatory combat logistic requirement: drinking water. And, again, the problem was the agonizing slowness of the advance. Our 24th Infantry Division had not faced such frustrating situations in the Hollandia operation.

The third day involved a radically different experience. In anticipation of a possible breakthrough to Mokmer by that bulldozer-led drive, Gen. Doe decided to make a waterborne flanking movement off shore from the cliff-blocked road and approach Mokmer from the sea in a single alligator, that hybrid combination of a hollowed-out tank and a landing craft. The alligator's steel tracks were designed to function like little paddle wheels, which would also provide forward motion in swamps and on land. Its top speed on water was 2½ miles an hour.

That looked like a pretty chancy maneuver to me. But I was a new kid on the block who had come to Biak for all the kibitzing experience available, so I asked if there was room aboard for another proponent of Russian roulette (although I did not phrase it that way). There was, and we put to sea at 2½ miles an hour.

Once our alligator was offshore, bypassing that regimental attack along the seaside road, we began to feel like a floating bull's-eye; but the Japanese had no heavy weapons on those cliffs sited out to sea, so we rounded the headland to a position offshore from the airfield and turned toward land.

Suddenly, there was a loud detonation overhead where a puff of smoke gradually dissipated. Then another shell burst overhead and our alligator began a slow sleepwalking turn toward where we had come from. Although the Japanese had no heavy guns sited seaward (since there was no landing beach on shore), they might find a way to depress that antiaircraft gun enough to get a direct bead on our alligator, so we eased along in retreat at 2½ miles an hour.

Eventually we made it back before dark, and found another amphibious plane had arrived with the chief of staff, Sixth Army, Col. (soon to be Brig. Gen.) George Decker. While I was surprised to see him, judging by the look he gave me he was even more surprised to see me. I realized then that corps had not told Sixth Army my information-gathering staff reconnaissance had been approved. Anyway, there seemed nothing more for me to gain at Biak, and the plane was returning to Hollandia—so I was soon on my way back to the 24th Infantry Division.

Some comments:

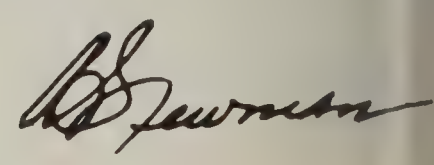
■ My esoteric Biak venture was a once-in-a-lifetime kibitzing opportunity. However, there are varied peacetime kibitzing opportunities. On your post, or within any major unit, experience need not be limited to normal duties. Any professional activity is an opportunity to broaden your experience. Illustration: if you are an infantry company commander, contact another branch unit commander in your area and offer to swap instructional visits within your respective units and areas of expertise.

■ Biak emphasized the basic principle that when there is trouble up front where the fighting is, do not condemn it *in absentia*—go see. Further, I gained experience of incalculable value to me. To my brief observation at Hollandia of one infantry regiment in combat, Biak added observations of two more regiments in radically different battle situations. This experience was of great help when I commanded the 34th Infantry in the Leyte invasion of the Philippines months later.

■ I also obtained some very different experience. Before taking off for Biak, I should have made sure (not just assumed) that both Sixth Army and 41st Infantry Division headquarters were informed—thus giving them the chance to nix the idea. Apparently, corps did not pass on the okay they had given me, and I was too recently removed from company level to understand that protocol is cumulatively more formal and necessary as you advance up the ladder to star and multistar headquarters. Gone were those unfettered days when I could walk from my company over to another, unannounced, and say on arrival, "Is it possible to get a good cup of coffee in this outfit?"

■ Some may think the preceding comment overemphasizes the protocol angle, but consider this: nearly 14 years later, when I was the new chief of staff, U.S. Continental Army Command at Ft. Monroe, Va., word was received from the Pentagon of a periodic General Staff meeting. In accordance with past policy it was expected that I would be present to listen in. Present at that meeting also was the former chief of staff, Sixth Army, who was the new chief of staff, U.S. Army. Immediately following the meeting, he came up to me and said, "What are you doing here?" (His question was a reverberation from Biak.)

■ Live and learn: that is how you get experience. Samuel Taylor Coleridge said it best: "This is one of the sad conditions of life, that experience is not transmissible." So I suggest this principle: do not wait placidly for experience to come to you, seek it—but with careful and well-considered judgment.



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Cerebrations

Demands on NCO Leadership Expand with AirLand Battle

he Army has always needed non-commissioned officers who are strong, ertive leaders and who are technically able of performing on the battlefield. this year of leadership, it is appropri- to reflect on how the emergence of AirLand Battle doctrine has affected leadership responsibilities of the NCO. NCOs are responsible for leading, su- vising, training, developing and car- for their soldiers. However, with the ption of the AirLand Battle doctrine 1982, the scope and complexity of O leadership responsibilities on the lefield increased greatly.

o understand how the AirLand Battle cts NCO responsibilities, the circum- ces leading to the development of the trine, the characteristics of the battle- l and the technological evolution of equipment the NCO must employ l to be examined.

he AirLand Battle doctrine resulted n a series of interrelated concerns ed during the 1970s. The Active De- e doctrine of 1976, with its focus on defense of Western Europe, was not d enough in scope to cover the full trum of conflict, from low to high sity. Furthermore, while commitment ne North Atlantic Treaty Organiza- (NATO) remained the cornerstone .S. foreign policy, the Army faced a enge in developing the capability to d vital U.S. interests outside of Eu-

nother concern was the defense pos- of the Active Defense doctrine. As ame implied, the doctrine focused on lefensive tactics necessary to defeat arsaw Pact threat. While the offen- spirit was included through counter- ks to regain the international bound- the Active Defense emphasized attri- of enemy forces and was interpreted thing more than a delaying action. at the Army needed, then, was a doctrine which would be applicable dwide and which emphasized the of- e spirit. The AirLand Battle doc- was designed to incorporate these s and to provide the framework in to fight outnumbered and win.

e AirLand battlefield is characterized gh mobility, lethal and sophisticated ons, severely degraded command ontrol, high technology, speed and rly designated main effort. On the uver-oriented battlefield, distinctions en rear and forward areas may blur; at could occur over the entire bat- d.

ed with the potential Soviet threat,



Photo: Frederick Sutter

the Army's doctrine recognizes that soldiers and units will be required to fight three battles—the deep battle, the battle at the forward line of own troops and the rear battle—each with differing tactics and unit requirements. The doctrine then requires weapons systems, equipment systems and organizations necessary to fight to the full depth of the battlefield.

As stated in the Army's *FM 100-5*, units must be prepared to meet a variety of situations and challenges. For the rest of this century, the Army must be prepared to be committed in either of two environments. The Army may have to fight on a sophisticated battlefield with an existing infrastructure of communications, air defense, logistical facilities and ports. Conversely, on a relatively unsophisticated battlefield, it may have to create an infrastructure, or choose to fight without one.

It must be ready to fight light, well-equipped forces such as Soviet-supported insurgents or sophisticated terrorist groups. Concurrently, it must be prepared to fight highly mechanized forces typical of Warsaw Pact or Soviet surrogates in Asia. In the areas of greatest strategic concern, it must expect battles of greater scope and intensity than ever fought before, including battles fought with nuclear and chemical weapons.

To win such battles, all available military forces must be coordinated in pursuit of common objectives which are fully understood by leaders at the lowest echelon. The initiative must be retained and the opponent's fighting capability must be disrupted with coordinated firepower, effective maneuver and decisive action, all synchronized for maximum effect.

To better enable the Army to execute the doctrine, new weapons and equipment systems are being introduced at the greatest rate since World War II. The advent of more sophisticated weaponry, command and control, and communications systems on a computerized battlefield has improved the combat capability of Army units. The lethality and effectiveness of new equipment have done much to enhance the Army's ability to execute its mission.

On the other hand, such systems have increased the requirement for technical competence throughout the ranks. The NCO, especially, must be trained to operate and maintain this equipment. He must be able to train his subordinates to use it, and he also must know how to employ it tactically in concert with other systems to maximize its effectiveness.

For example, since 1980, the Army has fielded the M1 Abrams tank, the M2/3 Bradley fighting vehicle system and the multiple-launch rocket system. Each of these systems has new, more demanding requirements, yet each is commanded on the battlefield by the NCO.

Current force modernization and systems integration demands on the Army are unprecedented. Within the next ten

years, the Army will field hundreds of additional systems which will require that soldiers are trained in new and more difficult operator and maintenance skills. The impact of these changes is magnified by the fact that systems must be interrelated and mutually supportive in fighting the AirLand Battle—so much so, that a change in any part of the combat equation affects the entire equation.

Thus, the body of knowledge required to keep high-technology machinery ready and to operate it effectively becomes broader and more complex. Only NCOs with high technical and tactical competence will be capable of meeting the requirement.

NCOs are particularly important in fields that are highly technical, such as military intelligence (MI). MI is using more automation and is relying on that automation to perform new tasks; for example, intelligence preparation of the battlefield, event templates and all-source production.

Systems such as the technical control and analysis center–division, interim tactical ELINT (electronic intelligence) processor and all-source analysis system are using complex computer programs to provide intelligence to AirLand Battle commanders. For enlisted soldiers, the acquisition of these systems means that they must be taught not only the normal intelligence functions, but also how to perform these functions in an automated environment. As a result, greater responsibility has been placed on the NCO to employ his assets properly and to coordinate with the supported units.

Training integrates weapons systems and doctrine. Starting with initial entry training and continuing through the noncommissioned officer education system, a soldier is provided formal training on critical common and "specialty-unique" subjects. Training continues in the unit with collective training programs designed to build upon the training received in school and oriented toward the unit's mission requirements.

The NCO is critical in all aspects of training. As the Army's principal trainer, he must bring his troops to peak proficiency both individually and collectively. The NCO must master existing training techniques and learn to create new and better ones. To effectively train his soldiers, an NCO must be more than just branch qualified; he must also possess an in-depth understanding of weapons and equipment, a thorough knowledge of doctrine and tactics, and the imagination and ingenuity to apply them on the battlefield.

The need for quality NCOs, however, is not based solely on the demands of sophisticated equipment and weaponry, but also on the requirements of sophisticated warfare. The effectiveness of maneuver, firepower and protection depends on how well leaders combine tactics, techniques and procedures to meet the realities of mission, enemy, terrain and troops available. Leaders must recognize inherent advantages and disadvantages in order to think ahead, develop alternative courses of action, evaluate these courses of action and take the initiative.



The noncommissioned officer is integral to the decision-making process. He is the first-line leader charged with not only leading his soldiers in battle, but also fighting the battle himself. The fluidity of the AirLand Battle may require the NCO to operate beyond the command and control of his officer chain of command.

As an example, light infantry battalions will place emphasis on small-unit actions. Because light units will be employed in urban terrain, mountains and heavily wooded areas, platoons may be separated from their parent unit and expected to function independently.

Additionally, electronic warfare, vulnerability of command and control, and mobile combat will demand that subordinate leaders be prepared to fight when isolated from the rest of their unit. This means that NCOs will have to employ permanently assigned units and supporting forces, and do so faster and more effectively than ever before. The ability of the NCO to make timely decisions within the intent of the mission, as stated broadly by his commander, will be critical to success or failure.

AirLand Battle doctrine requires that NCOs think in complex terms. They will no longer be expected to perform basic tasks or merely execute explicit orders. Rather, the NCO will be expected to analyze situations, synthesize critical elements, formulate alternative courses of action, and evaluate and select the best course of action. This requires an NCO who can think quickly and accurately in order to act decisively.

On the modern battlefield, where American soldiers will be expected to fight outnumbered against an enemy that will employ equally sophisticated weapons systems, a critical contributor to victory will be the ability of highly competent NCOs to execute the AirLand Battle doctrine.

CAPT. OLAF L. ELTON□

Five Strides To Better Retention

Recruiting for the Army Reserve has been great, the quality of new soldiers is better than ever, and we are getting rid of the "ghosts" and unproductive unit members . . . so what is the problem?

The problem is that the manpower pool is drying up. We have qualitatively reduced our strength to a level that is going to be difficult to increase rapidly. The reason is failure to plan for the current reality that there are not enough eligible or interested men and women to replace the losses.

As Gen. Maxwell R. Thurman stated in "Quest for Excellence Continues Strong" ("AUSA in Action," April 1984), "The number of youngsters in the age bracket 18 to 23 is declining for the next five to eight years, and the unemployment indices are beginning to turn around." This is a critical problem, but there is an old standby solution: retention.

Is the answer too obvious and simple? It is possibly obvious, but not simple. Retention has never been simple, just logical. Here are a few steps that will help retain more of the better soldiers:

■ *Know your soldiers.* Know not just their names, but the names of their wives and children; their birthdays, education, employment, strengths, weaknesses and, most important, their personal goals. What do they want to achieve through membership in the Army Reserve and what are they willing to give? When you can answer these questions, you are getting to know your soldiers.

■ *Recognition.* This goes beyond promotions, medals and letters. I am talking about immediate reinforcement for good work; for example: "Sgt. Smith, I appreciated your participation this weekend. I can always count on you to do a good job. See you next drill." You will be surprised at the impact this communication will have on your soldiers. You may also be surprised how well mediocre soldiers can perform when you make a habit of catching them doing the right things instead of looking for failures and mistakes.

■ *Behavior.* It is a fact that people respond in accordance to the expectations of their supervisors. Expect your soldiers to achieve standards of excellence, and they will; expect and settle for mediocrity, and this will become the standard; assume that nothing will ever be properly accomplished, and you will be obliged. The next time you consider reprimanding one of your soldiers, take a look at their role model—there may be a lot of soldiers out there who, in their opinion, are meeting your standards.

■ *Development.* Your soldiers are like professional athletes, they have an abundance of talent, but it must be identified

d developed. Concentrate on improv- their strengths with a minimal amount time spent on their weaknesses. This t only has a positive effect on their at- ude and morale, but frequently sparks ir underlying desire to become profi- nt in all areas of soldiering. Soldiers h high morale affect their co-workers d this automatically improves esprit d general soldiering throughout the it.

■ *Communication.* Once these steps understood, internalized and imple- nted, teach them to others. In time, re will be an atmosphere of positive nradery with a majority of your sol- rs demonstrating more initiative and ativity than ever before. Soldiers want be successful and their success is a re- tion of your leadership.



he steps outlined are not new but are quently forgotten or assumed to be simple. They require more than lip ice to be effective. They require imag- ion, desire, confidence and unyield- determination for successful imple- ntation. But no one ever said success a smooth, level road, especially in to- 's dynamic and challenging strength- nagement environment.

MAJ. JAMES C. SANDEFER☐

oid Turnover By Motivating Employees

It does not matter how successful an organization is in attracting high-quality people; it is the nization's success in retaining them counts. This is one of the few prin- es of basic personnel management all of us seem to agree on. Yet, hav- agreed, most of us are unable to ef- vely come to grips with the problem mployee turnover.

here are almost as many reasons for loyee turnover as there are industrial hologists. However, six broad cate- es include most commonly accepted ons: poor selection, improper initial ement, inadequate assimilation into work force, irrelevant orientation training, underuse and poor supervi- While all of these factors are signif- , the first five are merely manifesta- of the sixth, poor supervision.

my managers are surprisingly casual t selecting, developing and monitor- ing their first- and second-level supervisors. Many civilian employees become supervisors because of their seniority alone, and their military counterparts just show up from somewhere to fill a slot.

Yet, poor supervision is linked to each of the other five factors and is the most important single causative factor that can be identified. This is true not only for employee turnover, but for any personnel management problem.

Robert Carney of the College of Industrial Management, Georgia Institute of Technology, says that the management function encompasses the management of six *m*'s: machines, materials, methods, men, markets and money. A strong case can also be made for including a seventh *m*, motivation.

Certainly there is nothing new about the concept of motivation. Significant research in the area of motivation analysis was done by Professor Frederick Herzberg at Case Western Reserve University in the early 1960s. Professor Herzberg found that the levels of job satisfaction, motivation and productivity among the groups studied were closely related to two sets of factors which he labeled "dissatisfiers" and "motivators."

Dissatisfiers include pay, supplemental benefits, organization policy, supervision, working conditions and other similar factors peripheral to the mission or task. Although these factors had always been considered by managers to be employee motivators, Professor Herzberg found them to be more powerful as dissatisfiers. High motivation does not result from their improvement, but dissatisfaction results from their deterioration.

Motivators generally include achievement, recognition, responsibility, growth, advancement and other matters associated with the self-actualization of the individual on the job.

Professor Herzberg's research came to the attention of M. Scott Myers, manager of personnel research, Texas Instruments Co., Inc., who was involved in motivation research of his own. Mr. Myers concluded that, for most employees, the greatest satisfaction and the strongest motivation are derived from achievement, responsibility, growth, advancement, work itself and earned recognition.

People like this, "motivation seekers," react primarily to the nature of the task. They have a high tolerance for poor environmental factors, and their morale, individually and collectively, is typically high.

"Maintenance seekers," on the other hand, react primarily to their environment. They are chronically preoccupied with maintenance factors such as pay, supplemental benefits, supervision, working conditions, job security, rules and policies, and co-workers. These employees realize little satisfaction from accomplishment and express cynicism regarding the positive virtues of work and life in general. Their morale is normally perceived by management to be poor.

Although an employee's orientation as a motivation seeker or a maintenance seeker is fairly permanent, it can be influenced by the work environment. For example, maintenance seekers in an environment of achievement, responsibility, growth and earned recognition tend to eventually acquire the behavior patterns

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and values of motivation seekers.

Supervisors, then, must provide the conditions that result in motivation and satisfy maintenance needs. Conditions of motivation are task centered; they depend on the supervisor's skill in planning and organizing work.

Ideally, members of each succeeding organizational level are provided with responsibilities which, in turn, can be subdivided into meaningful segments that challenge capabilities and satisfy aspirations. Matching jobs with people requires a knowledge and control of the task, as well as an understanding of individual aptitudes and aspirations.

The maintenance needs (that is, economic, social, security, orientation, status and physical) present the greatest challenge for a supervisor. His support in satisfying these needs is essential, particularly so for security and orientation needs.

Feelings of security are largely influenced by the supervisor and determine whether the individual will be assertive in a constructive, motivation-seeking manner or will fall back on maintenance-seeking behavior. The satisfaction of orientation needs requires supervisors who are able and willing to dispense information, as this need can seldom be satisfied by handbooks or other written communication. Further, this information-dispensing role keeps communication channels open.

To be effective, a program such as this requires a fairly comprehensive educational process on the part of supervisors whereby awareness, understanding, conviction and habit are developed. However, considering the resources available within the Department of the Army, coupled with the widely held opinion of the critical importance of supervision, these goals are attainable. The following approach is suggested.

An appropriate training course should be developed, one which explains the motivation maintenance concept and provides the basis for its use. The course should be videotaped for standardization, and attendance should be mandatory for all civilian and military supervisors of civilian employees.

Keeping in mind that attitudes are measurable predictors of both behavior and morale, a formalized attitude measurement program structured in the motivation–maintenance frame of reference should be developed and implemented. This program, administered annually to 10–15 percent of the population, would yield trend and comparison data which would serve both as measures of supervisory effectiveness and as keys to corrective action.



"That Harrison is the best darn spotter pilot we've ever had!"

The program could then be supported and enhanced through more effective use of existing management tools such as performance evaluation, special training courses, awards and recognition, and the like.

In the final analysis, the development and preservation of that elusive and complex state referred to as "high morale" requires the development and preservation of an equally elusive and complex set of management skills. Supervisory competence has a direct impact on the power of motivators and dissatisfiers in the work environment and, therefore, on morale itself.

The Army can no longer afford its casual approach to the hiring and training of civilian and military supervisors of civilian employees. Potential supervisors must be carefully screened and identified to ensure that they possess basic skills and abilities before they supervise within a fragile organizational structure.

Supervisors at all levels must be developed and must then be held strictly accountable for supervisory competence. Continuing attempts to motivate employees through the use of maintenance factors are misguided, futile and expensive.

As a final point, it should be recognized that no one system is a panacea, and this approach is certainly no exception. While most workers can be motivated, it is obvious that a few cannot. Since Army managers already have adequate and efficient management tools at their disposal for dealing with the latter, they must identify the former and devote their energies and talents to the development and advancement of motivated workers.

Once military and civilian supervisors are developed to the point where they can, in turn, effectively provide the conditions of motivation and satisfy the maintenance needs of their employees, the Army will have approached the optimum in effectively and efficiently using its human resources.

DONALD E. ABELL□

CAPT. OLAF L. ELTON is an operations research–systems analysis officer in the Office of the Deputy Chief of Staff for Training at Training and Doctrine Command headquarters, Ft. Monroe, Va.

MAJ. JAMES C. SANDEFER is currently serving as secretary of the general staff, Headquarters, 91st Division (Training), Ft. Baker, Calif.

DONALD E. ABELL is an industrial psychologist with over 27 years of experience in the personnel field. He is now chief of management–employee relations, Civilian Personnel Office, Ft. Sam Houston, Tex.

rsonnel Policy Changes Approved

Congress has agreed to several changes to the Defense Offi- Personnel Management Act (DOPMA), which would af- t active-duty and Reserve commissioned officers and active- ty warrant officers.

Among the changes are the following provisions:

- Active-duty officers who have failed twice to be selected promotion to captain are no longer eligible for considera- n by a selection board.
- Reserve second lieutenants on the active-duty list who not qualified for promotion to first lieutenant will be dis- rged from their appointments rather than be released from ive duty.
- Commissioned officers who are eligible for promotion he grades of captain through colonel will be excluded from sideration if they have an approved separation date within days of the date the promotion board convenes.
- Officers who are honorably discharged from a regular mmission may be given a Reserve appointment in the high-

The Bulletin Board

grade held and credited with the time-in-grade they had he former regular position.

The three-stage board process for discharging regular of- rs for cause has been reduced to two boards, bypassing the ination selection board at the initial stage of inquiry.

The secretary of the Army may deny separation pay, viously known as severance or readjustment pay, to offi- separated from the Army for cause.

Special selection boards may now convene to consider a rant officer for promotion in cases when an error occurred he original consideration or when the officer was eligible should have been considered but was not.

Retired officers who were on active duty and were eli- for promotion before DOPMA was passed and who have ained on active duty since DOPMA are once again eligible promotion.

Ms May Serve Beyond 30 Years

limited number of sergeants major (SGMs) will be re- d on active service for up to 33 years under a policy ap- ed by the Army. Previously, only command sergeants r and selected Army Band members were authorized for tion for more than 30 years.

e policy was changed in an effort to help the Army hold individuals who possess special expertise in a given field. ideration for retention beyond 30 years will be by appli- n only, with selection conducted on a case-by-case basis Department of the Army centralized board. Retention be restricted to no more than two percent of the serving force.

erve Pay System Improved

my Reservists have begun using plastic personal data —similar in appearance to credit cards—to record their attendance and to ensure timely payment following their

The system was developed to alleviate the problem of late payments caused by errors in the processing of payment paperwork.

Under the new reporting system, Army Reserve units will use the cards to record those soldiers who attend the drill, rather than those who are absent as was done in the past. In addition to providing a quicker and more reliable method of recording attendance, the system provides the Reservist with a personal record of attendance, which was not available previously.

Upon arrival at the training center, the Reservist will present his personal data card to a finance clerk, who will imprint the information on the card on a special form. The Reservist and the unit official will then review the form and sign it to verify attendance at the drill. One copy will be kept by the Reservist for his records and a second copy will go to the Army Finance and Accounting Center at Ft. Benjamin Harrison, Ind., for processing and payment.

'Sure Pay' Program Update

Participation in the Army's "sure pay" program will remain optional for soldiers now serving but will be mandatory for those entering the service after 30 September.

Under this program, the soldier's pay check is sent directly to the financial institution where he does business. Individuals joining the Army after 30 September will be required to take part in the program under the provisions of their service contracts, which must be pointed out to them at the time of their enlistment.

The sure pay program was first available to soldiers in 1972. The system was to become mandatory for all service members as of last October, but when misgivings were expressed by members of the Senate Armed Services Committee, that ruling was suspended and a review was begun to find a suitable alternative policy. Although the program is optional for active-duty military personnel, the Army will continue to encourage participation and has gone so far as to designate sure pay as its standard pay method.

New Clothing Allowance Policy

This October, enlisted soldiers will begin receiving their clothing maintenance allowance payments in annual lump sums rather than the smaller monthly payments now made.

The new policy follows a Department of Defense study which determined that service members are more likely to use their allotments for necessary uniform and accessory purchases when the payment is in the form of a larger, more visible, once-a-year allowance specifically set aside for that purpose.

Clothing maintenance allowance rates will continue to vary depending on the service, gender and length of duty, with the number and type of articles in the clothing bag being the determining factor.

The Army's monthly allowance for soldiers with under three years of service has been $6.90 for men and $8.40 for women. For soldiers with more than three years of service, the monthly rate has been $9.90 for men and $12.00 for women.

After 1 October, the single annual payments will be $82.80 for men with less than three years of service and $100.80 for women in that category. Male soldiers with over three years of active duty will receive $118.80; their female counterparts $144.00. These once-a-year payments will be made on the last day of the month in which the soldier's anniversary date of enlistment falls.



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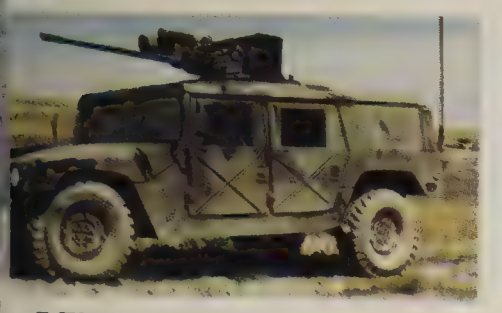
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Specialist 5 and 6 Eliminated, Replaced by Hard Stripe Ranks

Army Chief of Staff Gen. John A. Wick-
m Jr. has decided to abolish all special-
five and six ranks in favor of NCO
ard" stripes, following an extensive re-
w of the issue and discussions with
ner Army leaders at this spring's major
nmanders' conference in Washington,
C.

News Call

This decision will affect an estimated
550 active-duty soldiers—45,735 in
rank of specialist five and 3,815 in
rank of specialist six, according to
ures from the Army's Military Person-
Center. Army personnel officials hope
mplement the decision by 1 October,
ch marks the beginning of a new fis-
year.

The cost of this change, in terms of
form alterations, will be borne by the
ny, say officials. Those affected by
decision will receive the necessary
sergeant or staff sergeant rank insignia and work order chits allowing them to have the new ranks sewn on their uniforms.

One of the key supporters of the decision to eliminate the specialist ranks has been Gen. William R. Richardson, head of the Army's Training and Doctrine Command (TRADOC). A study group from TRADOC had been closely examining the issue as part of an overall review of the enlisted personnel management system, which culminated in a meeting of 35 TRADOC command sergeants major earlier this year at Ft. Lee, Va.

While the TRADOC study group supported elimination of specialist five and six ranks and retention of specialist four (at least for the time being), Gen. Richardson went on record supporting elimination of all specialist ranks. In March, he made that recommendation to the Army's deputy chief of staff for personnel (DCSPER), Lt. Gen. Robert M. Elton.

"Converting specialist five and specialist six to hard stripes can be accomplished soon," noted the TRADOC commander, but "converting specialist four to corporal may take some time. To accomplish specialist four conversion to corporal will first require changes to regulatory and legal guidance."

Gen. Richardson added, however, that "we [at TRADOC] believe the noncommissioned officer corps starts at the rank of sergeant, not corporal." The senior NCOs who met at Ft. Lee expressed similar sentiments. "Leadership will be enhanced if NCOs have hard stripes," said a spokesman for that group. "NCOs have the responsibility to lead no matter what their job is."

The official noted the concern among the command sergeants major if all specialists four were to be made junior NCOs, saying that "at the E4 level, the soldier is still developing." The option for unit commanders to convert specialists four to corporals still exists, where the situation requires it, said the official.

The current rank structure was established in the late 1950s to provide a separate promotion path for soldiers desiring to advance in a specific technical field as opposed to a higher NCO position. The system provided for specialist ranks in all of the pay grades above E3, but the top two were rarely awarded and quickly went out of use. The rank of specialist seven was eliminated in 1977.

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jor Explosives Test Slated. The De-
e Nuclear Agency (DNA) will con-
t a high-explosives test next month at
ite Sands Missile Range, N.M., to de-
ine how military hardware, vehicles
structures respond when exposed to
ir blast and ground shock environ-
t which simulates a nuclear-level ex-
ion.

what one official at the test site de-
es as "the largest high explosives test
," 4,800 tons of ammonium nitrate
oil fuel will be detonated simulta-
sly with the help of a 100-pound
l booster.

llowing the explosion, test officials
the DNA, nine other U.S. agencies
six foreign governments will conduct
300 experiments for several weeks
ward to measure the reaction of the
rials and property to the blast. An
onmental assessment of the test has
luded that no significant environ-
al effects will result from the ex-
on.

t Division Update. Army Chief of
Gen. John A. Wickham Jr. has set
700-troop limit on the size of the ser-
new light divisions, following or-
ational design changes which raised
ize of the divisions from the 10,000
rs originally envisioned to 10,600.
Wickham has also said the 495 sor-
xpected to be needed to airlift a force of 10,700 troops is an unacceptably high figure and the Army's goal will be a configuration requiring no more than 475 aircraft sorties.

The troop strength increases have come primarily through the addition of artillery and mortar units as Army planners have responded to complaints that the light divisions lacked the necessary fire power to take on enemy armor elements.

Within the next few years, the Army plans to add ten more combat battalions to the existing 370 to help bring two of the new light divisions up to strength,



This UH–60A Blackhawk transport helicopter is being flight-tested with a composite rear fuselage (CRF) under Air Force funding. Advanced composite materials and manufacturing techniques, now vital to Army aircraft designers, make the CRF lighter and stronger than the standard metal rear fuselage. The CRF is scheduled for a two-year field service evaluation at the Army Aviation Center, Ft. Rucker, Ala.

the 10th Mountain Division (Light Infantry) and the 6th Infantry Division.

The new battalions will be created without increasing the Army's overall strength, which will remain at 780,800 according to Gen. Wickham. The Army will fill the new battalions by eliminating nonessential administrative and support positions and allocating their spaces to the combat arms.

Of the five new light divisions, three are now being formed or converted—the 7th, the 10th and the Army National Guard's 29th, with the 7th scheduled for completion this year.

The 25th Infantry Division will begin converting to light division format later this year and is scheduled to complete its reorganization by the end of fiscal 1986. The 6th Infantry Division will also be activated as a light infantry division later this year, using the existing 172nd Infantry Brigade in Alaska as a nucleus.

The 6th, which will have an Alaskan regional defense mission, will include an airborne battalion; none of the other light divisions will have parachute capability. All of the divisions are scheduled for completion in or before fiscal 1988.

In a related development which has generated a lot of publicity, the Army is considering training some members of the 10th Mountain Division (Light Infantry) in mule handling. However, an Army spokesman has described the plan as "very preliminary" and said the chances of the Army using mules are "a long shot."

Command Moves Announced. In an effort to reduce overall costs and improve the efficiency of operations, the Army has decided to relocate the Engineer Center and School and the Intelligence and Security Command (INSCOM).

The officer engineering school will be transferred from Ft. Belvoir, Va., to Ft. Leonard Wood, Mo., where it will be consolidated with the enlisted engineering training center by fiscal 1989. INSCOM, which is currently based at Ft. Meade, Md., and Arlington Hall Station, Va., will be consolidated by fiscal 1988 at a new single facility to be built at Ft. Belvoir.

The engineering school move is being made to combine and standardize engineer officer and enlisted training, to eliminate unnecessary duplication in manpower and equipment, and to alleviate the space limitations at Ft. Belvoir, which has one fifteenth the acreage of Ft. Leonard Wood.

The Army also plans to move its Corps of Engineers Headquarters and Medical Personnel Support Agency, both of which are presently located in leased space in Washington, D.C., to Ft. Belvoir in fiscal 1990 and the Criminal Investigation Command from leased space in northern Virginia to Ft. Meade during fiscal years 1987 and 1988.

Arlington Hall Station, as a single-unit installation, will be closed by fiscal years 1988 and 1989, following the relocation of INSCOM.

Guard Tanks to be Upgraded. The Army National Guard's tank units will all be issued the M1 Abrams main battle tank or the M60A3 main battle tank by fiscal 1989, according to Army Chief of Staff Gen. John A. Wickham Jr. The majority of Army National Guard units are currently equipped with the M48-series and older M60A1 tanks.

The newer model tanks have only gone out to Guard units within the past few years. The Georgia Army National Guard received the first M60A3 tanks three years ago and the North Carolina and Mississippi Guard units began using the M1 Abrams tank two years ago.

GENERAL OFFICER CHANGES



Lt. Gen. Q.H. Becker from CG, 7th MEDCOM & CSurg, USAREUR/Seventh USA, to SG, USA.



Maj. Gen. D.S. Pihl from DCSS, ODCSRDA, to CG, 9th Inf. Div.

Brigadier Generals: **T.N. Dyer** from CS, USAADACENFB, to CD, NORAD; **W.G. Ganey** from CD, NORAD, to DEPDS, ODCSPER; **R.R. Jorgensen** from ACSVS, 7th MEDCOM, to CVC, OSG, USA; **Arnold Schlossberg Jr.** from CASG, OCSA, to ADDFDSP, J5, OJCS; **R.D. Wolfe** from CAD, ODCSOPS, FORSCOM, to DCG-East, USAREC.

■ ***DCSS**—Director, Combat Support Systems; **USAADACENFB**—U.S. Army Air Defense Artillery Center and Ft. Bliss; **CD**—Command Director; **DEPDS**—Director, Enlisted Professional Development Study; **ACSVS**—Assistant Chief of Staff for Veterinary Services; **CVC**—Chief, Veterinary Corps; **CASG**—Chief, Army Studies Group; **ADDFDSP**—Assistant Deputy Director for Force Development and Strategic Plans; **CAD**—Chief, Aviation Division.*

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Purple Heart Gains Status. The Purple Heart Medal, awarded to individuals who are wounded or killed in combat or by terrorist attack, will now be worn directly below the Bronze Star in order of precedence, according to a ruling from the Office of the Secretary of Defense.

This decision ends months of controversy about where the Purple Heart should be worn on the uniform, following an amendment to the fiscal 1985 Defense Authorization bill mandating the award be upgraded.

The original legislation called for placement of the Purple Heart immediately below the lowest decoration for valor, which in most cases would be the Bronze Star. However, due to the fact that Bronze Stars are awarded for service and achievement as well as valor, and Commendation Medals are occasionally awarded for valor, the Purple Heart award would have had a "floating" precedence if the legislation were followed to the letter.

In an effort to avoid this ambiguity, Defense Department officials had earlier recommended ranking the Purple Heart below each service's Commendation Medal. After lengthy consideration, the decision was made to fix the Purple Heart position directly below the Bronze Star, which normally is only awarded during foreign conflicts.

Replicas of Training Tabs. Individuals authorized to wear Ranger or Special Forces tabs will soon be able to purchase metal replicas of the tabs for wear on dress uniforms. The small metal tabs may be worn on the Army blue, white, mess and evening uniforms.

Model Installations Program. Twelve more military bases have been added to the Department of Defense's (DoD's) "model installations program," including the first six overseas facilities.

The three-year program, introduced on 15 installations in 1983 in an effort to help bases operate more efficiently by turning over more responsibility to individual base commanders, was initially to include only the 15 originally selected installations; but early success and the response of the participants prompted expansion.

The new additions include two facilities in West Germany, one each in the United Kingdom, Spain, Japan and South Korea, and, stateside, four Air Force bases, one Army post (New Cumberland Army Depot, Pa.) and a Marine Corps base.

Commanders participating in the program have recommended a number of changes which have been adopted service-wide and some which are being adopted throughout DoD. Among the proposals in the latter category are:

■ Elimination of the requirement fo



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testing soldiers and civilians selected to drive certain military vehicles if they already hold a valid state driver's license.

- Elimination of the rule regulating maximum and minimum building temperatures in DoD facilities.
- Allowing installations to make purchases of more than $3,000 with local operations and maintenance funds.
- Allowing troops to perform minor repairs and modifications to their work places such as painting and redecorating.
- Allowing base commanders to approve major building repairs on the site, rather than requisitioning the work through a senior military department.

Degreed Officer Slots Added. The Army Educational Requirements Board (AERB) has validated 750 more positions for Army officers that will require the individuals holding them to have either bachelor's, master's or doctoral degrees.

Army commands and field agencies had identified the positions they felt should be filled by officers with specific degrees prior to the AERB action. Among the approved positions were 127 which will require advanced degrees in space-related disciplines in support of the Army's space program. The board also identified positions requiring advanced degrees in the Army's "technological enrichment program," which includes fields of study such as artificial intelligence, robotics, biotechnology and laser physics.

The newly approved slots include 30 positions requiring a doctoral degree, 75 warrant officer positions, 12 positions in the Judge Advocate General's Corps a 19 in the Chaplain's Corps.

In addition to approving 750 new po tions, the AERB confirmed 3,800 existi positions requiring advanced degre These positions had been approved wh the last AERB met in 1983. The boa has also approved 334 positions in t "training with industry" program, unc which officers spend a year in traini with a civilian firm to acquire skills wh can be transferred to Army operatio

'Legion of Valor' Reunion. "The gion of Valor," whose members are cipients of one or more of the natio two highest decorations for valor, w hold its annual reunion from 18 to July, in San Jose, Calif.

The Legion of Valor was organized 1890 by a group of Civil War and Ind wars veterans who were recipients of Medal of Honor. At its inception, the ganization was named "The Medal Honor Legion." In 1918, membership v opened up to recipients of the Army D tinguished Service Cross, the second-ra ing Army decoration for extraordina heroism. Later, recipients of the Na Cross and the Air Force Cross were vited to join the membership and the ganization changed its name to "The gion of Valor."

Any qualified candidate interested attending the reunion or finding out m about the organization may write Carlos C. Ogden Sr., National Comma er, Legion of Valor, 6013 Calle de Fel San Jose, Calif. 95124.



Photo: Grover Brink

This fence outside the home of the eighteenth President, Gen. Ulysses S. Grant, nea St. Louis, Mo., was made from the rifle barrels of 2,563 Civil War-era weapons. Ger Grant lived in the cabin in the background, known as 'Hardscrabble House,' followin his resignation from the Army in 1854. After the Civil War, a large number of rifles wer stored on the property until it was decided to use the barrels for the fence.

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Delivery of the 68 Class 2 Full Scale Development (FSD) models under contract has now begun. The first has been shipped to the U.S. Army. Of the total, 27 terminals will be shipped to the Army, 19 to the U.S. Air Force and 22 to the U.K. Ministry of Defense (MOD).

The USAF will use JTIDS in the E-3A (AWACS) aircraft to enhance Airborne Early Warning and in F-15 fighters for combat air patrol. The Air Force ground based command and control centers will also utilize this protected link.

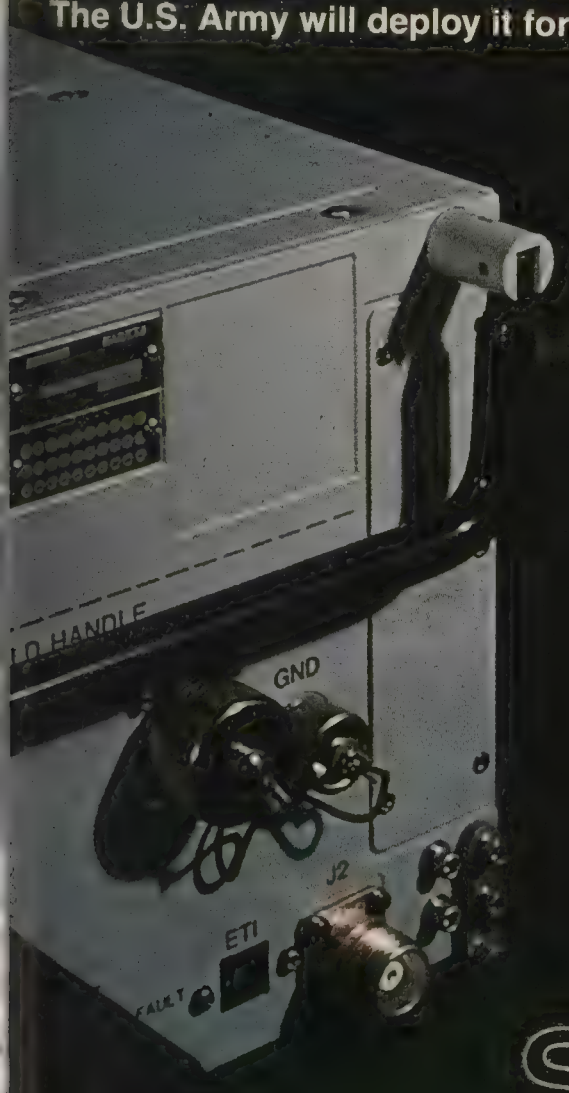
The U.S. Army will deploy it for command and control of the Short Range Air Defense System (SHORAD) and High to Medium Air Defense System (HIMAD) battlefield Air Defense systems for coordination of Patriot, Hawk and Stinger class weapons. Initially, the tests will involve the integration of the terminals into the PLRS/JTIDS Hybrid system.

Application of the Units for the UK MOD include TORNADO, NIMROD and UKADGE installations. A joint USAF/Army evaluation exercise is also planned.

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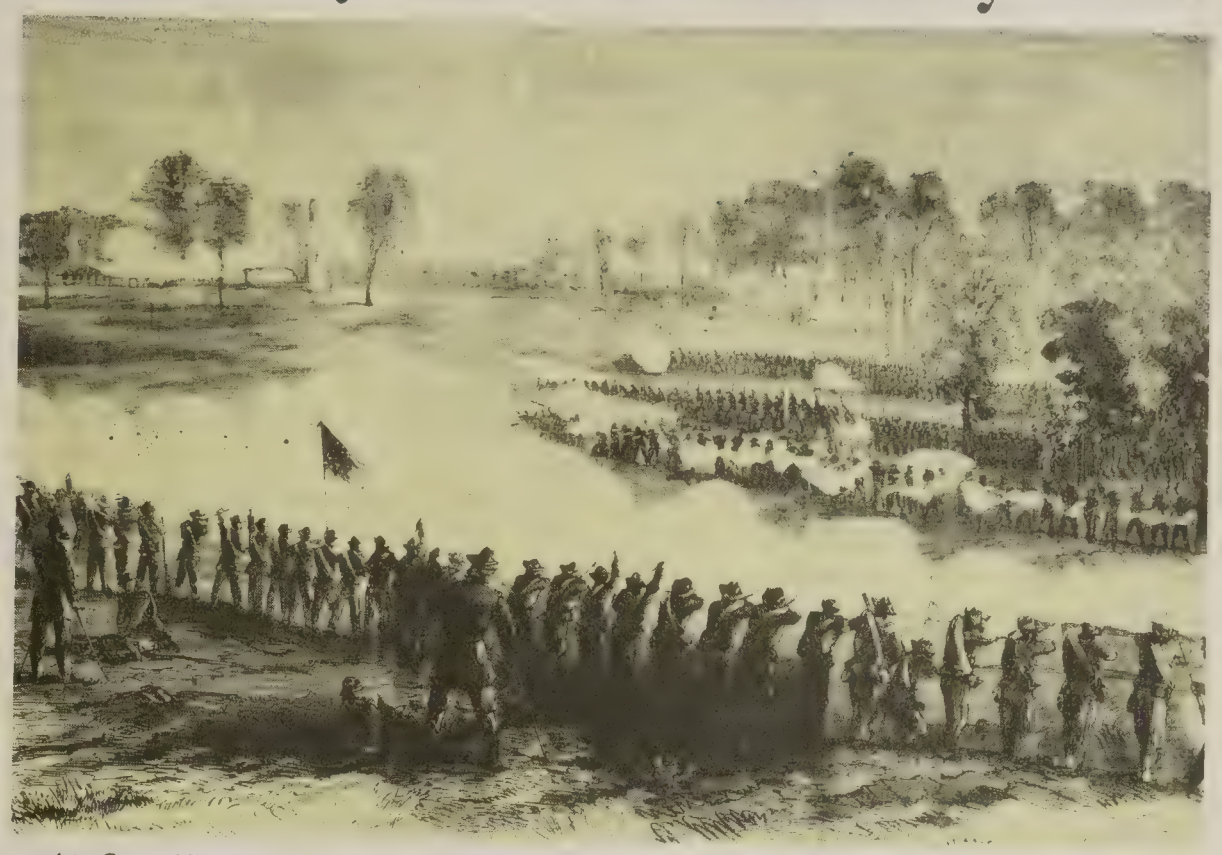
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A Comprehensive Survey of U.S. Military Past

r the Common Defense: A Military History of the United States of America. *Allan R. Millett and Peter Maslowski. The Free Press, 866 Third Ave., New York, N.Y. 10022. 621 pages; illustrations; chapter-selected bibliographies, general bibliography; $24.95.*

By Russell F. Weigley



Lt. Gen. Ulysses S. Grant's Petersburg campaign, 1864: a preference for maneuver.

Books

here has never before existed a single-volume American military history it so successfully attains a comprehensive treatment of every aspect of the subject.

Among efforts to survey the whole of American military past, Walter Millis's *Arms and Men: A Study in American Military History* (1956) is superior to *For the Common Defense* in the profundity and challenge of its interpretations and is still well worth reading after almost a generation); but Mr. Millis's book offers nothing approaching authors Millett's and Maslowski's wealth of factual detail.

In terms of such detail, the authors succeed in paying ample attention to the battle and campaign narratives that were the staple of traditional military histories while also offering the new military history concerned with the political, administrative and social dimensions of the subject. To say that this book does not quite match author Millis's in interpretative depth is not to say that it does not give the reader a good deal of astute and provocative analysis; it does.

Peter Maslowski, professor of history at the University of Nebraska–Lincoln and a former student of Allan Millett's, wrote the chapters on history to 1902. His ability to synthesize is remarkable in a young historian.

Allan Millett, professor of history at the Ohio State University and director of that school's program in international security and military affairs, has long been well known among military historians for a variety of books and articles, as through other professional activities. His background as an officer in the Marine Corps Reserve has helped assure strong coverage of maritime affairs in chapters on the twentieth century, where such strength is especially desirable. There has been a tendency in other military historians attempting comprehensive treatment of the American military past to approach the subject from the Army's perspective, and Professor Millett offers a healthy, balanced corrective.

An aspect of the book's relative weakness in interpretation is that it does not tie together its detailed recital of events as much as it could have with a consistent coverage of military thought, which might have lent greater coherence to a narrative of disparate events. This weakness affects the war narratives, where the writers might have said more about strategic conceptualization of wartime aims and means.

However, there are also occasional salient strengths in this area. For example, Professor Maslowski's coverage of the Civil War—which is of a high order altogether—points out correctly that Lt. Gen. Ulysses S. Grant scarcely merits the standard criticism of him as a butcher, not only in that his strategy of eliminating the Confederate armies was ultimately successful, but also in that it was never his strategic design merely to trade casualties with the enemy.

Against Gen. Robert E. Lee's Army of Northern Virginia, Gen. Grant hoped to outmaneuver Gen. Lee to place the enemy army in a vulnerable or untenable position. It was because of repeated failures by subordinates that Gen. Grant was obliged to fall back on the second-best method of destroying Gen. Lee's army, that of head-on fighting. Gen. Grant's preference for a strategy of maneuver has been too often neglected.

Allan Millett is thoroughly knowledgeable about current issues in national security, and consequently the final chapters of the book present an excellent summary of those issues and their immediate background, including a concise account of the Vietnam war.

He aptly compares President Reagan's defense program with the military rebuilding during the Korean War, which lifted the armed forces out of the near ruin of post-1945 demobilization and created essentially the military profile that the nation has retained. That is, he reminds readers that this country is in the midst of the most fundamental military reorganization in a generation.

With characteristic insight, however, he also reminds his audience that current increases in military spending raise more questions than they answer, as they bring into the open debates about missions and roles, and particularly about the allocation of strength between threats in Europe and threats in the Third World.

It can be stated glibly enough that military problems are not solved by money alone. Author Millett, and indeed the historical background developed by the entire book, shows the reason why.

This book ought to be read by every soldier and civilian concerned with the problems of the common defense.

RUSSELL F. WEIGLEY is professor of history at Temple University and author of History of the United States Army.

Useful Reference Book

Almanac Offers Pertinent Facts

A Quick and Dirty Guide to War: Briefings on Present and Potential Wars. *James F. Dunnigan and Austin Bay. William Morrow & Co., Inc., 105 Madison Ave., New York, N.Y. 10016. 415 pages; maps; bibliographical note; index; $17.95.*

By Col. Stanley L. Falk
U.S. Army Reserve, retired

This collection of briefing papers and charts is designed to provide quick and easy reference material on major trouble spots throughout the world. It contains lengthy, functionally organized briefs on 15 representative areas of actual and potential conflict, plus an annotated tabular rundown on many other scenes of political or military dispute. A final series of detailed tables analyzes the relative military capabilities of nations around the globe.

The authors, who have a broad background in developing military simulations and war games, have put together an informative, handy and useful "almanac of past and current events." Largely a compendium of facts and historical descriptions, it also offers interpretive material, including an ambitious effort to predict future wars and their potential outcomes.

Each of the discussions of major trouble areas that constitute the bulk of the book has the same structure, designed to offer a hearty mixed grill of information in an easily digestible form. A few introductory paragraphs identifying the problem are followed by a brief explanation of the immediate background of the conflict, a description of the antagonists, and geographical and historical rundowns. Then comes a detailed outline of local politics on all sides.

A discussion of the political–military strategies and options of the players precedes a look at Soviet, American and, in some cases, Chinese interest in the area. Finally, the authors offer their estimate of the potential outcomes of the situation and a brief statement of the human and economic costs of the conflict. A few concluding paragraphs include additional miscellaneous facts and analyses.



The authors have used a variety of classified sources, and drawn on th professional backgrounds and imagi tions to interpret their findings. Th briefings are adequate but, as is the ture of briefings, not presented in gr depth. As a quick reference guide, book offers pertinent facts, interestin sometimes debatable conclusions and dictions, and an occasional colorful provocative item sure to come in ha at dull meetings.

COL. STANLEY L. FALK, U.S. A Reserve, retired, Ph.D., was form deputy chief historian for South Asia at the U.S. Army Center of M tary History and is the author of books on World War II.



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Balanced Research Needed

Controlling the Technology Gen

The Militarization of High Technology. *John Tirman, ed. Ballinger Publishing Co., 54 Church St., Cambridge, Mass. 02138. 264 pages; notes; index; $28.*

Future War. *Frank Barnaby, ed. Facts on File Publications, 460 Park Avenue South, New York, N.Y. 10016. 192 pages; notes; $16.95.*

National Interests and the Military Use of Space. *William J. Durch. Ballinger Publishing Co., 54 Church St., Cambridge, Mass. 02138. 304 pages; index; notes; $28.*

The Shape of Wars to Come. *David Baker. Stein and Day, Scarborough House, Briarcliff Manor, N.Y. 10510. 260 pages; index; appendix; $10.95.*

By Col. John T. Burke
U.S. Army, retired

Military technology is moving at a remarkable pace and the implications are enormous. Is this a boon or a curse? Are the effects—political and economic as well as military—benign or perversely negative? Do high-technology weapons offer effective deterrence or simply exacerbate the arms race and conflict tential? To grasp the complex dyna is difficult, yet crucial.

Military technology has had a m impact on the U.S. industrial econ and on government-funded research in laboratory and classroom. In *The tarization of High Technology*, e Tirman and eight writers cover the in considerable depth. Their analyses prophesies, while qualified, are disti negative. Military spending, the reac told, has a profound and potentially aging effect on high-technology indu

"Cost-heavy" inefficiency in defens search and development and produ infects commercial industry with si viruses. Thus, there is a drag on pro tivity and on progress in commercia technology.

Defense program involvement may be hazardous to one's scientific or demic career, not to mention the r implications. The book's ideological is evident, as is the lack of balance posing views are sometimes refere but in token fashion. This is, neve less, a challenging, provocative and able portrayal of dynamics and trer which we must be alert.

As a broad overview of the global ar-
ments situation and weapons technol-
, *Future War*, flawed as it is, is worth
ding. Editor Barnaby was for ten years
ector of the Stockholm International
ce Research Institute. He and six au-
rs present a wealth of information on
or weapons systems along with their
ws on the dynamics of technology
warfare, the role of the military–po-
al–industrial establishment, the arms
le and the likelihood of major conflict.
useful sourcebook on global scope,
aments data and, to an extent, mili-
dynamics may be defective because
analytical bias, which is surely the
here. The pacifist tune and antide-
e lyrics are familiar. Thus, no dis-
tion is made between American de-
e needs and objectives and those of
Soviet Union. The book is useful,
ever, in that the reader gleans valu-
information and insights, including
ght into the myopic views infecting
general public.

space the new high ground to be
ed? Is space-based defense (Star Wars)
alistic alternative to the present de-
ence of mutual assured destruction?
e say that even if the concept were
ible technically and monetarily, it
ld provoke a dangerous Soviet re-
nse and expand the arms race into
e.

learly, the decision hinges on a host
omplex factors. *National Interests*, a collection of nine essays, contributes much to an understanding of these factors. Broad in scope, it addresses the evolution of U.S. and Soviet space technology, policy and objectives. It also covers feasibility and costs, measures and countermeasures, the antisatellite dilemma, negotiation alternatives and international law.

The author suggests approaches, does not draw precise conclusions and is cautious. Aggressive pursuit of weapons in space may not be in our best national interest. Perhaps we should negotiate "rules of the road," reserve space for passive, beneficial pursuits such as surveillance and verification.

The Shape of Wars to Come contrasts markedly in both content and conclusions. The foreword, by Gen. George F. Keenan, former chief of U.S. Air Force intelligence, sets the tone: space for peace is a "utopian dream." Space is now the key to free-world survival. Soon space, which the Soviets aim to control, will dominate the battlefield.

Author Baker expands on this ominous message in considerable detail. Never mind what the Soviets might do; what they are and have been doing to pursue aggressive dominance in space is the point. Their urgent, intensive programs in key technologies, such as high-energy laser, particle beam, rocket boosters, antisatellite and antimissile, are far more advanced than the public has been led to believe.

Evasion, if not direct violation, of strategic arms agreements is evident but, in the interests of "space for peace," the United States prefers to "shoot the messenger." Negotiation may prove useful, but it is no substitute for urgent action to counter the Soviet ploy, which, with present trends, could prove fatal.

Keeping abreast of military technology is difficult. Too many scientists, professors and journalists think one can simply stuff the technology genie back into the bottle, which is nonsense. What is needed is unbiased, well-balanced research and analysis which, alas, is hard to find these days.

COL. JOHN T. BURKE, U.S. Army, retired, is a consultant in the field of weapons development policy.

As a service to readers interested in obtaining books reviewed in *ARMY*, the mailing address of the publisher is included in the head notes for each main review and Varied Fare item. Readers are reminded that neither *ARMY* nor AUSA has the facilities to order books for them or to handle the related correspondence; inquiries and orders must be directed to the publisher.

The Editors



"Send this thing to basic training immediately."

Examining Soviet Military

New Topics— Old Opponent

Soviet Armed Forces Review Annual, Volume 7. *David R. Jones, ed. Academic International Press, Box 1111, Gulf Breeze, Fla. 32561. 490 pages; tables; figures; maps; bibliography; $64.50.*

By Col. James B. Motley
U.S. Army, retired

Since 1977, *Soviet Armed Forces Review Annual* has published in one comprehensive volume a statistical overview and analysis of indicators of Soviet military power and a set of accompanying essays on Soviet military affairs. With this volume, coverage is from end-March to the following April.

This year's volume, in addition to an excellent introductory survey of the "Soviet Military Year in Review," by Mr. Jones—director of both the Russian Research Center of Nova Scotia and Dalhousie University's Russian Microproject—incorporates two new features. A chronology of Soviet military events which will be updated annually has been added along with an 82-page survey of Soviet arms control policy.

Tables, maps and figures also appear throughout the book. Chapter endnotes

and a bibliography of essays, articles and books on Soviet military and strategic issues serve as invaluable reference aids.

This review provides detailed insights into Soviet military capabilities, and thus is a valuable contribution to Western studies on Soviet military affairs. Informative and well-written essays by experts cover Soviet strategic rocket, ground, air-defense, air, navy and airborne forces, as well as the Soviet economy, space program and the Soviet Union's activities in Africa.

Other topics examined are the expanded use of Soviet operational maneuver groups, interpretations of the reorganization of the Soviet air services and the use of multinational formations as a means of ensuring the loyalty of Warsaw Pact units.

As the United States continues to modernize its armed forces, Americans need to have a clear understanding of the Soviet Union's military capabilities. Accordingly, this book is highly recommended both for the specialist and general reader. Although expensive, it will prove to be an asset to the serious student's collection of books on the Soviet Union.

COL. JAMES B. MOTLEY, U.S. Army, retired, Ph.D., is a member of the professional staff of the National Institute for Public Policy, Fairfax, Va.

Varied Fare

Battles and Campaigns in Vietnam. *Tom Carhart. The Military Press. Distributed by Crown Publishers Inc., One Park Ave., New York, N.Y. 10016. 189 pages; photographs; illustrations; maps; index; $12.98.*

This book by an experienced veteran and student of the war has a solid text, enhanced by excellent photographs, many in color. There are separate chapters on the air war, the naval war, such operations as the Ia Drang Valley, Junction City, Tet, Hue and Khe Sanh, and of particular value as correctives for persistent postwar myths, the Cambodian and Laotian incursions and events in Cambodia since the war ostensibly ended.

U.S. Small Arms of World War 2. *Howard R. Crouch. SCS Publications, 6825 Donahue Ct., Falls Church, Va. 22042. 225 pages; photographs; illustrations; tables; charts; appendixes; bibliography; $18.*

This book offers substantial information on the design, development and battle performance of World War II arms and accessories, including major weapons, snipers, submachine guns, .22-caliber trainers, shotguns, survival and edged weapons. While the book provides comprehensive data specifically for the collector and historian, it also functions as a practical guide for anyone interested in acquiring and using small arms from World War II and includes a section on purchasing weapons, rifle and pistol shooting, reloading data, st restoration and preservation techniques. P fusely illustrated with drawings and pho graphs on almost every page as well as merous diagrams and charts, this useful re ence work is a long-needed book of facts collectors of World War II small arms.

Pretoria's Praetorians: Civil-Military Relati in South Africa. *Philip H. Frankel. C bridge University Press, 32 East 57th New York, N.Y. 10022. 215 pages; figu tables; notes; select bibliography; in $44.50.*

According to the author, a senior lecture the department of political studies at the U versity of Witwatersrand, "The role of military in South African politics is essenti unexplored. . . . This scholarly oversight i anomaly at variance with some of the m developments of past and contemporary So African history." The author attempts to rect the oversight with this detailed volu the "first full-scale study of the South Afr military as a racially heterogeneous agen the white state. . . ."

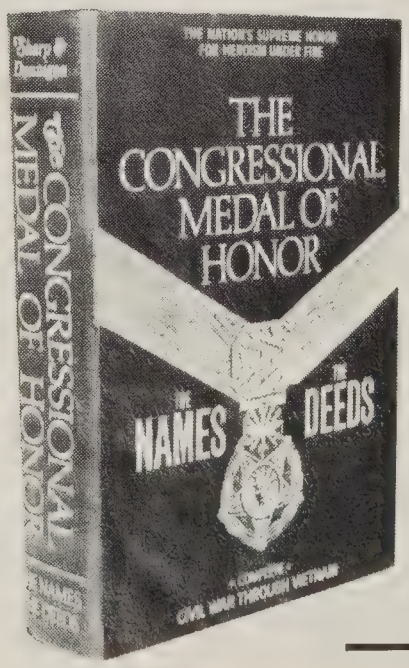
Touring Nam: The Vietnam War Reader. *tin H. Greenberg and Augustus Rich Norton, eds. William Morrow and Co., Madison Ave., New York, N.Y. 10016. pages; $16.95.*

This colorful collection of 26 pieces dea with the war in Vietnam includes short sto excerpts from novels, and accounts by j nalists and participants, chosen to give an pression of a 12-month tour in the war.

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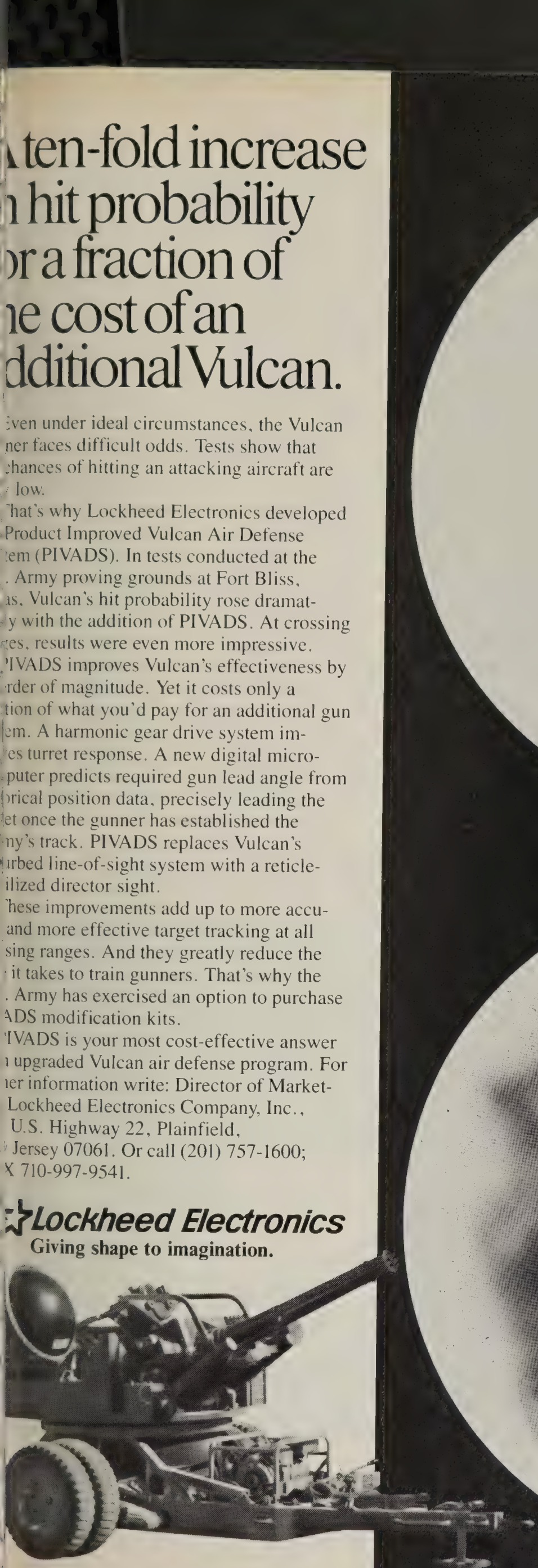
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SCIENCE/SCOPE

Army Cobra attack helicopters will be able to fly combat missions around the clock and defeat advanced enemy armor, thanks to a night vision device and a new antitank missile. About 500 Cobras, or half the Army's fleet, will be modified to remain effective through the 1990s. A forward-looking infrared (FLIR) device will be installed in the telescopic sight of the Cobra's airborne TOW missile system, allowing gunners to see through darkness, smoke, or haze. (In addition to firing the missile, the sight is used to direct cannon and rocket fire.) Modifications will also let the Cobra fire and guide the new TOW 2 missile, which features improved guidance and a more potent warhead. In official tests of a FLIR-augmented TOW sight at several Army installations, gunners scored more than 90% hits in both day and night TOW missile firings. Hughes Aircraft Company will begin deliveries next year.

In the 25 years since the birth of the world's first laser at Hughes Research Laboratories, the "light fantastic" has grown from a laboratory curiosity into an indispensible tool in medicine, industry, electronics, data processing, communications, and scientific research. That first laser, built by Dr. Theodore H. Maiman, was operated on May 15, 1960. It used a flash lamp coiled around a solid ruby crystal to produce an intense pulse of red light with a wavelength of precisely 6943 angstroms. Lasers today employ various gases or crystals and operate throughout the electromagnetic spectrum. They are used as tools for cutting, welding, drilling, and marking metals; as alignment and measuring devices; as the sources of signals in fiber-optic communications systems; and as rangefinders and target illuminators in military systems. Promising new medical uses include advanced eye surgery techniques, internal cauterization, and treatment of cancer. Already used in some computer printers, lasers one day will be widely used in high-speed optical computers to process and store data.

The first full-scale development AMRAAM missile was fired successfully at the White Sands Missile Range in New Mexico. The missile was launched from a U.S. Air Force F-16 at 40,000 feet at a speed of Mach 1.2. It flew a preprogrammed course designed to evaluate the missile's control system and separation from the launch aircraft. It did not have a seeker but instead was programmed through its autopilot to fly a prescribed route. The Advanced Medium-Range Air-to-Air Missile is in full-scale development at Hughes for the U.S. Air Force and Navy.

An advanced factory management system model, developed by Computer Aided Manufacturing-International and Hughes, will help optimize use of manufacturing resources. The model will address interactions of all work areas within every level of the organization. It will precisely identify department production capacities, queue bottlenecks, and resource flow. Managers now must make decisions without knowing all interactions among workstations, cells, and departments.

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AUSA in Action

ducational Series of Talks lated for Service Schools

Gen. John R. Thurman III, USA, Ret., A's director of industry affairs, announced the Association is beginning its ninth ıal series of addresses at selected Army ce schools during the spring of 1985. e series, entitled, "Landpower—The De- e Element of National Security," will ter in both students and faculty mem- alike, an understanding of Landpower, storical and present importance, as well s decisive role, not only in deterring war, in winning a war if fighting becomes ssary," Gen. Thurman said.

USA," he continued, "is the strongest most effective proponent of the 'Land- r Doctrine,' and we feel that it is essen- o bring this important message to the rs attending advanced classes at our ce schools and the Army's Command General Staff College."

sociation officials announced that this five AUSA staff members, including senior associates, will participate in program. Gen. Thurman will speak at dvanced class at the Armor School, Ft. , Ky., and Gen. John R. Guthrie, USA, director of the Association's Landpower Education Fund, will speak at the Military Police and Chemical Schools, Ft. McClellan, Ala., and the Field Artillery School, Ft. Sill, Okla.

AUSA senior associates—Lt. Gen. Richard G. Trefry, USA, Ret.; Lt. Gen. Richard L. West, USA, Ret.; and Lt. Gen. Howard H. Cooksey, USA, Ret.— will also visit the service schools.

Gen. Trefry will speak at the Ordnance School, Aberdeen Proving Ground, Md.; the Army Command and General Staff College, Ft. Leavenworth, Kan.; and the Air Defense School, Ft. Bliss, Tex. Gen. West will address the Soldier Support Center, Ft. Benjamin Harrison, Ind., and the Engineer School, Ft. Belvoir, Va. Gen. Cooksey will deliver the Landpower address at the Transportation School, Ft. Eustis, Va.; the Signal School, Ft. Gordon, Ga.; and the Infantry School, Ft. Benning, Ga.

Gen. Thurman concluded, "We feel this is a very rewarding effort. As an educational association, AUSA thus plays a part in informing those in service schools of the important and crucial role Landpower will play in their future professional careers."



. Col. James R. Sesslar Jr. Memorial Company (Northern Michigan University). *ıe company recognized the 49th Field Regiment, Canadian Militia, for its outstanding pport and friendship. Lt. Col. Walter Wallace* (left), *commander, 49th Field Regiment, ult Sainte Marie, Ontario, receives the award from Lt. Col. Howard B. Schweppe, ofessor of military science, Northern Michigan University.*



Hawaii Chapter. *Steve Jenness, record-breaking winner of the 10-kilometer AUSA run at Schofield Barracks, receives his award from Bill Paty* (center), *chapter president, and Maj. Gen. Claude M. Kicklighter* (right), *commander, 25th Infantry Division.*

Annual Meeting Plans Discussed

Members of the 1985 Annual Meeting Committee met to begin formulating the program for the Association's yearly event, which will be held 14–16 October at the Sheraton Washington Hotel in Washington, D.C.

Representing the Total Army, the committee considers various topics and issues to be discussed at the Annual Meeting, which is known as the largest Landpower forum in the world. Members of the committee also assist the national staff by recommending keynote speakers, panel and seminar participants, and speakers for special events such as the ROTC, sustaining and corporate member lunches, and the chapter presidents' dinner.

Members of the 1985 committee are: Lt. Gen. John R. Thurman III, USA, Ret., AUSA's director of industry affairs and chairman of the Annual Meeting; Lt. Gen. Arthur E. Brown Jr., director of the Army staff; Lt. Gen. Robert M. Elton, deputy chief of staff for personnel; Lt. Gen. Elvin R. Heiberg III, chief of engineers; Lt. Gen. Robert L. Moore, deputy commander, materiel development and acquisition, Army Materiel Command; Lt. Gen. Louis C. Wagner Jr., deputy chief of staff, research, development and acquisition; Lt. Gen. Quinn H. Becker, surgeon general; Lt. Gen. Benjamin F. Register Jr., deputy chief of staff for logistics; Maj. Gen. John L. Ballantyne III, commander, Military

District of Washington; Maj. Gen. Vincent E. Falter, commanding general, U.S. Army Military Personnel Center; Maj. Gen. William R. Berkman, chief, U.S. Army Reserve; and Maj. Gen. Herbert R. Temple Jr., director, Army National Guard.

Also serving on the 1985 Annual Meeting Committee are: Maj. Gen. Robert H. Forman, chief of staff, U.S. Army Training and Doctrine Command; Maj. Gen. Burton D. Patrick, chief, legislative liaison; Maj. Gen. Thurman E. Anderson, chief of staff, U.S. Army Forces Command; Maj. Gen. James H. Johnson, assistant deputy chief of staff, operations; Maj. Gen. Stephen R. Woods Jr., director, program analysis and evaluation; Maj. Gen. Harry E. Soyster, commanding general, U.S. Army Intelligence and Security Command; Maj. Gen. Charles D. Bussey, chief of public affairs; Brig. Gen. William H. Roche, deputy chief, legislative liaison; Brig. Gen. Richard B. Griffitts, deputy chief of public affairs; and SMA Glenn E. Morrell, sergeant major of the Army.

Committee members will soon be submitting recommendations for session topics and suggestions for speakers for the 1985 Annual Meeting program.



Chattahoochee Valley–Ft. Benning Chapter. *Army Infantry School Assistant Com mandant Brig. Gen. Edwin H. Burba Jr.* (right) *chats with Ft. Benning Drill Sergean of the Year SFC Mark S. Ripka and his wife, Deborah, during the chapter's annua general membership meeting held at the Columbus, Ga., Convention and Trade Cente*



Sunshine Chapter. *Fol lowing an address by t Army's vice chief of sta Gen. Maxwell R. Thurm* (right), *David Halloran, chapter president, pre- sents Gen. Thurman w a seal of the State of Florida and an AUSA chapter certificate of appreciation.*



Japan Chapter. *The commander of Army Materiel Command, Gen. Richard H. Thompson, displays the AUSA Japan Chapter T-shirt presented to him at a chapter membership meeting by Col. Richard Ippolito, chapter president.*



Douglas MacArthur Chapter. *Corporate member C. H. Dellinger, Devon Home Center Stores, presents a wristwatch to Soldier of the Quarter Sgt. James Wilder, 368th Transportation Co., 11th Transportation Battalion, Ft. Story, Va.*

›ters



Newton D. Baker Chapter. *Honorees at the chapter's 12th Annual Soldier of the Year Awards Luncheon are, from left to right, CSM Oscar Barker, FORSCOM, guest speaker; Sp.4 Harold Ortiz, 112th Engineer Battalion, OHARNG; Sp.5 Thomas Benedict, 256th General Hospital, USAR; Sp.4 James McCall, MEPS–Cleveland; Sp.4 Jeffrey Toth, 2nd PsyOp Group, USAR; Sgt. Daniel Campbell, Cleveland Recruiting Battalion; Cadet Ralph Maser, ROTC, John Carroll University; Sp.4 Debra Carano, 169th Support Group, USAR; Sgt. Daniel Freedman, 2077th USAR School; and Sgt. Larry Bowman, 107th ACR, OHARNG.*

Chapter Notes

›oit Chapter. The chapter awarded a ‹ scholarship to Cadet Paul Teague, ›ern Michigan University, for his outstand-›erformance of duty in pursuit of AUSA ›s within his cadet corps.

›l. Dick Coffman, U.S. Army Armor School Center, Ft. Knox, Ky., discussed the fu- of armor while addressing a chapter ›kfast meeting.

Sunshine Chapter. Brig. Gen. Wayne C. Knudson, director of force requirements and the Army aviation officer, Department of the Army, gave a presentation on "Army Issues in Aviation" at a chapter dinner at the Walt Disney World Conference Center.

The chapter also sponsored the second annual Presidents Day commemoration ceremony, which featured Gen. Wallace H. Nutting, commander in chief, Readiness Command, as its guest speaker. Gen. Nutting's theme was "The Legacy of Washington and Lincoln."

Japan Chapter. The commander of the Army Materiel Command, Gen. Richard H. Thompson, visited the Japan Chapter, where he discussed the role and mission of his command while addressing a chapter general membership meeting.

San Jacinto Chapter. Maj. Logan D. Fitch, USA, Ret., one of the principal commanders designated to lead the rescue attempt to free the American hostages held in Iran, discussed the rescue mission while speaking at a chapter membership dinner.

The Turkey Chapter. Beauveau Nalle, U.S. consulate general, spoke about the importance of NATO while addressing chapter members at a dinner meeting held at the International Dining Hall.

Cincinnati Chapter. Soldiers missing in action in Southeast Asia were the topic of a talk given by Jeff Nelligan, editorial writer, *Cincinnati Enquirer,* at a chapter luncheon meeting.

Des Moines Freedom Chapter. Col. J. R. Hart, MBE, British Army, talked about the war in the Falkland Islands while attending a chapter dinner meeting held at Camp Dodge.

Arizona Territorial Chapter. Vice Adm. Crawford A. Easterling, commander, Naval Air Forces, U.S. Pacific Fleet, was the featured speaker at a chapter luncheon co-hosted by the military affairs committee, Phoenix Chamber of Commerce.

Capital District of New York Chapter. Chapters of AUSA, the Retired Officers Association and the Reserve Officers Association co-hosted a luncheon at which Robert E. Mulligan, assistant curator of military history, New York State Museum, gave a slide presentation on the war in the Falkland Islands.

Topeka Chapter. Dave Fisher Jr., chairman of the Kansas Committee of Employer Support of the Guard and Reserve, discussed at a chapter meeting how employers can help the national defense effort by supporting the guardsmen and reservists they employ.

Fort Pitt Chapter. The chapter, along with the Pittsburgh World Affairs Council, co-hosted the Army War College Briefing Team, which gave a national security issues briefing to high school political science and economics teachers.

Denver Centennial Chapter. Thomas Turn-

★ STAR CHAPTERS ★

Chapters that reach their aggregate membership targets are classified as Star Chapters and ill retain that status until they fail to reach any subsequent membership goal. The following chap-rs have achieved Star Chapter status. Chapters annotated with an asterisk have attained their ›miannual goal based on the 30 June, 1985, membership targets and the end-March 1985 mem-›rship statistics. Those chapters without asterisks achieved their Star Status based on the 31 ›ecember, 1984, membership goals.

Alaska (Anchorage)
Ark–O–Tex (Texarkana, Tex.)
Bavarian Alpine (Munich, Ger.)
Blue Mountain (Harrisburg, Pa.)
Bogardus S. Cairns (Ft. Rucker, Ala.)
Braxton Bragg (Ft. Bragg, N.C.)
Captain Shreve (Shreveport, La.)
Central Texas–Ft. Hood (Killeen)
Chattahoochee Valley–Ft. Benning (Columbus, Ga.)
Cincinnati (Ohio)
Connecticut (Norwalk)
Denver Centennial (Colo.)
Des Moines Freedom (Iowa)
Dix (Ft. Dix, N.J.)
Douglas MacArthur (Norfolk, Va.)
Fairfax–Lee (Ft. Belvoir, Va.)
Florida Gulf Stream (Miami)
Ft. Jackson–Palmetto State (Columbia, S.C.)
Ft. Monmouth (N.J.)
Fort Pitt (Pittsburgh, Pa.)
Fort Worth (Tex.)
Gallant Pelham (Ft. McClellan, Ala.)
GA Omar N. Bradley (Ft. Bliss, Tex.)
Gen. Creighton W. Abrams (Frankfurt, Ger.)
Gen. Joseph W. Stilwell (Ft. Ord, Calif.)
Gen. W. C. Westmoreland (Reno, Nev.)
George Washington (Washington, D.C.)
Greater Augusta–Ft. Gordon (Ga.)
Greater Gulf Coast (Mobile, Ala.)
Greater Los Angeles (Calif.)
Hawaii (Honolulu)
Henry Leavenworth (Ft. Leavenworth, Kan.)
Indiana (Ft. Benjamin Harrison)
Korea (Seoul)
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Magnolia (Jackson, Miss.)
Maine (Saco)
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MG Henry G. Sharpe (Lathrop, Calif.)
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Mid-America (Wichita, Kan.)
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New River Valley (Radford, Va.)
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San Jacinto (Houston, Tex.)
Southeastern Oklahoma (McAlester)
* Southern Arizona (Ft. Huachuca)
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age, director of the Selective Service S tem, was the featured speaker at a chap general membership meeting.

Central Ohio Chapter. The commander the Defense Construction Supply Cen Maj. Gen. Lawrence D. Garrison, US gave a command and overview briefing a general membership dinner.

New York–Col. Joseph Markle Chapt Col. William L. Longarzo, commander, Hamilton, N.Y., spoke at a chapter lunche where he gave an update on the varied m sions of the New York Area Command.

Blue Mountain Chapter. Lt. Gen. Elvin Heiberg III, chief of engineers, spoke a chapter general membership meeting.

Maj. Gen. Henry A. Sharp Chapter. national defense budget was the subjec a talk given by Brig. Gen. John H. Stanf commander, Military Traffic Managem Command, Western Area, Oakland A Base, Calif.

Middle Forge Chapter. Lt. Col. William Brien, USAR, discussed the Army's miss in Grenada while addressing a chapter m bership meeting. Col. O'Brien was deplo to Grenada from Ft. Bragg, N.C.

AUSA–ROTC Company Note

Carson–Newman College Company. company sponsored and hosted a Ju ROTC field day—athletic events, a pi and adventure training—held on campu the athletic field and Holt Field House. M than 450 high school students from Ten see, Virginia and North Carolina participa

William O. Darby Company (Eastern M igan University). The cadet company m bers held an on-campus blood donor d and sponsored a canned food and clot drive to benefit the local Salvation Arn

Douglas Blodgett Company (George son University). Cdr. Daniel Jones, U Ret., showed the film, *Peace Through Stre* at a company meeting.

The Citadel Company. The company s sored an appearance of the 82nd Airb Chorus for an on-campus concert atte by more than 400 students and faculty m bers.

Capt. Sylvan K. Bradley Memorial Co ny (University of Missouri). Don He son, assistant professor of petroleum engineering, spoke of his experiences i Army's Quartermaster Corps.

Lamar Company (Lamar University). ard Thomas, director of the Center for tegic Technology, Texas A&M University cussed "Soviet Awareness" while add ing a company meeting.

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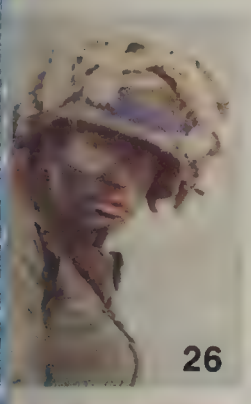
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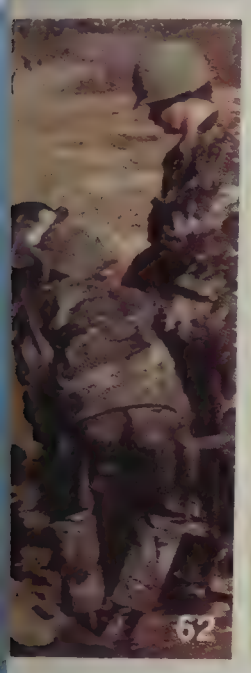


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ARMY

The Magazine of Landpower

VOL. 35, NO. 6 Published by the Association of the U.S. Army JUNE 1985

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In its new light divisions, the Army is taking advantage of traditional infantry virtues: stealth, local mobility, terrain knowledge; but the service must resist the urge to add 'just a few' heavy weapons, for these would compromise both strategic mobility and the sources of light infantry combat power. **By Gen. William E. DePuy, USA, Ret.**

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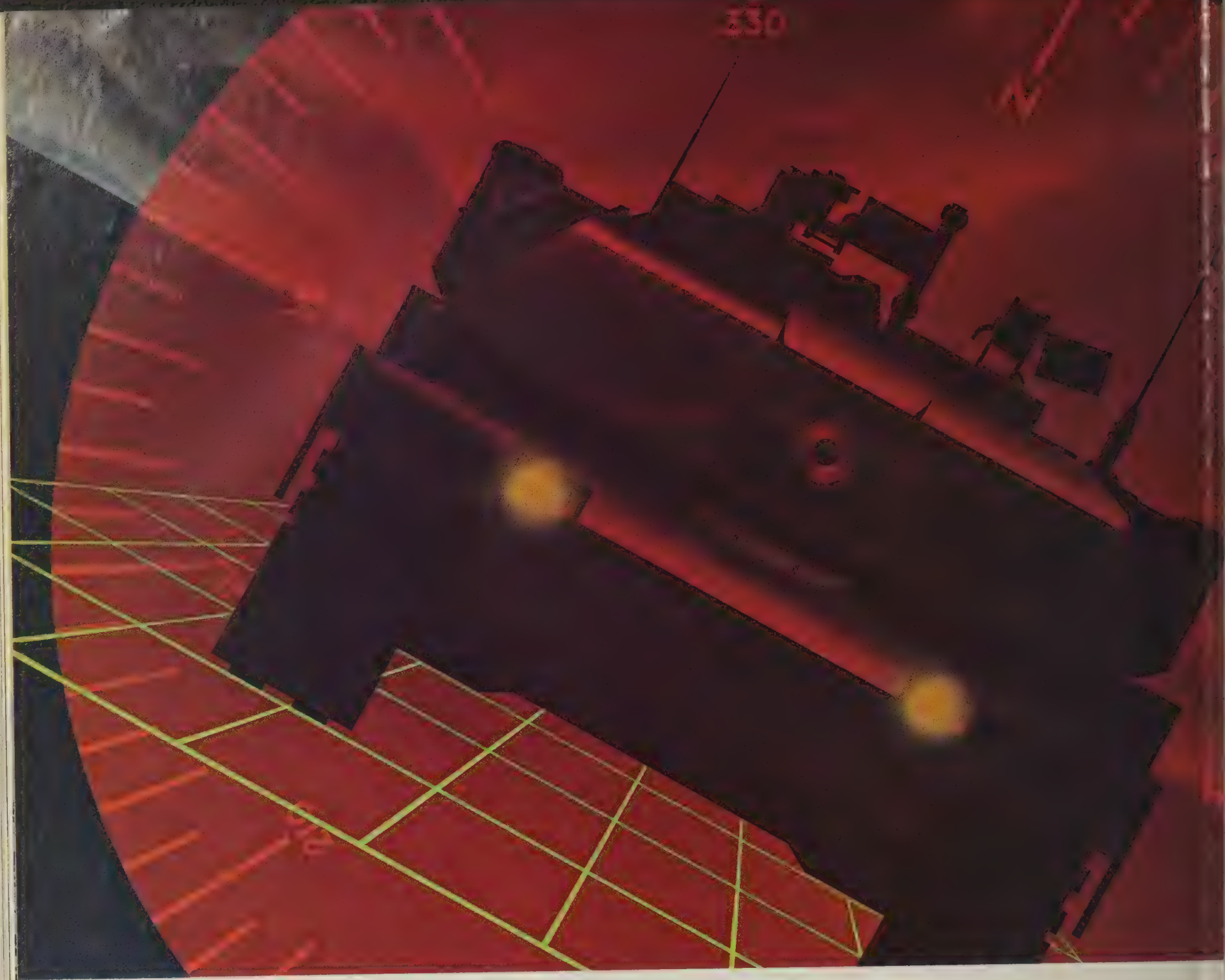
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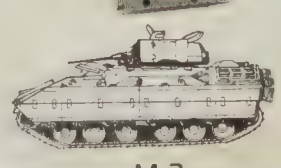
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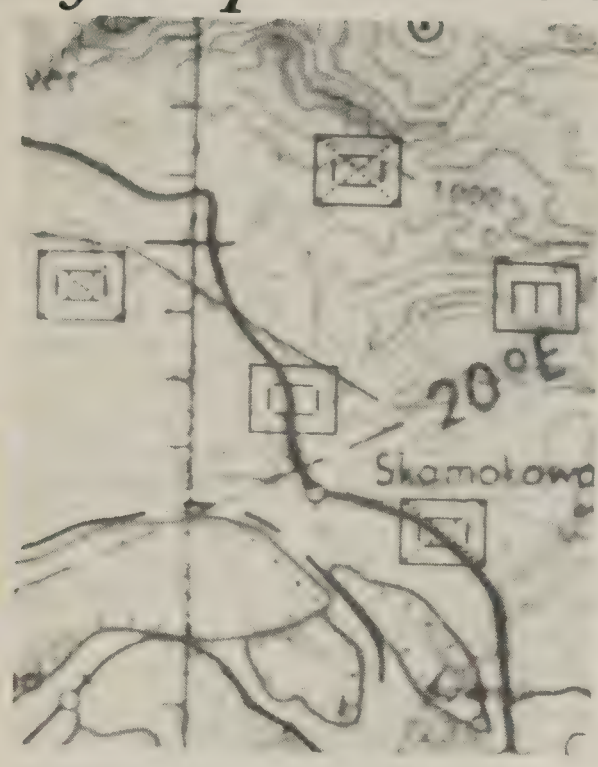
Writers of ARI Study Respond to Critique of Approach

As authors of the report, "Human ors Representations for Combat Mod- published by the Army Research In- ute for the Behavioral and Social Sci- es (ARI), we read with interest Col. N. Dupuy's, U.S. Army, retired, cri- e of this study in his article, "Criti- ns of Combat Models Cite Unreliabil- of Results" ("Front & Center," March). he purpose of the study was to iden- how to improve existing and emerg- combat models in the way they repre- human factors. As part of the study, conducted sensitivity analyses to esti- e the impact on simulated combat re- of changing human factors assump- s and data.

ol. Dupuy is critical of our study ap- ch. (He does not comment on wheth- e concurs with the study's results. For nple, does he agree that decision-mak- aspects of command-control and in- gence are among the highest priority s for behavioral modeling research?) is primary criticism is that the mod- sed in the study are "widely recog- d to be unreliable and unrealistic." uggests they have no historical basis is particularly concerned about the of validation of the models." We ve his criticisms are unfounded and ar to be based on limited knowledge e current state of the art of combat eling and analysis.

e agree that our approach would been inappropriate if the models no basis in reality. In fact, the prin- combat models we used (and other els developed since the early 1970s) ied to reality. Through analyses of data, field tests, operational ex- es and reports of historical engage- s, we have learned to replace hypo- al constructs in combat models with vable and measurable characteris- f elements on the battlefield and to l their dynamic interactions.

rthermore, we know of at least four ssful model validation studies over ast two decades. The most recent conducted in 1981 with the VEC- -2 campaign model, the basic model in performing the sensitivity analy- the ARI study. We were surprised l. Dupuy's failure to mention this in rticle, since an unclassified descrip- of it is given in the proceedings of 982 North Atlantic Treaty Organi- n symposium on combat modeling. CTOR-2 was applied to the Golan



Heights campaign in the 1973 Arab–Israeli war. Except for the small engagements to capture and recapture the Mount Hermon observation post, all phases of the campaign from 6 October through 13 October were simulated. Essentially all of the significant fighting occurred during this period, which ended with the Israeli forces dug in along a penetration line in Syria from Beit Jan to Tel Shams, and then back west to the Purple Line and south along the length of the old cease-fire line.

Information about the campaign and its quantitative results were obtained from seven classified and unclassified historical accounts. In recognition of the importance of human factors in a campaign, best intelligence estimates of Syrian performance (aiming, firing and the like) with Soviet equipment and command control were used. Detailed quantitative comparisons between the simulated campaign results and those in the historical accounts are given in a report of the validation study. Two qualitative observations from the study are:

- VECTOR-2 generated a simulated realization of the Golan Heights campaign. Its time-phased locations of the forward edge of the battle area throughout the campaign, sequence of engagements and attrition were all within the bounds of the reported realizations. There was no scientific evidence to suggest that either the operational tactics models or the engagement models in VECTOR-2 should be rejected as reasonable representations of combat.
- The study supported the concept of modeling campaigns for use in analysis of defense issues. While this one verification study is not sufficient evidence to suggest that combat models can be used to produce precise quantitative campaign results, it does appear to disprove the continual assertion by some people that campaign models produce attrition that is off by an order of magnitude in both amount and timing.

The Golan Heights validation study highlighted an important consideration regarding analysis with historical data. There was only one Golan Heights campaign, but the actual realization (in contrast to the reported ones) will never be known. The seven historical accounts of the campaign considered in the validation study (including Col. Dupuy's) disagree markedly in their quantitative estimates of combat results.

Apparently, historical reporting of combat suffers from "unreliability of results." Would Col. Dupuy suggest that the use of such historical data in defense analysis constitutes "a grave threat to our national security"?

We disagree with Col. Dupuy's opinions about the ARI study. It used valid analytic tools and produced credible and meaningful results. Existing combat models do still have flaws, and the underlying military operations science is still evolving. However, we believe that today's problems of national security demand the use of the best analysis tools available, while the analysis community (including historians) continues to improve the tools for use on tomorrow's problems.

George Miller
Seth Bonder
Ann Arbor, Mich.

Gathering Intelligence

- The April issue was excellent. I enjoyed "Counting Enemy in Vietnam: A Difficult, Frustrating Task" by Maj. Gen. Edward B. Atkeson, U.S. Army, retired, ("Front & Center"). I was in Vietnam from 1967 to 1968 and wondered how important the enemy population count was. I always thought the enemy's capability and intentions were more important than his numbers.

Now to the real mistake—"Army's First Unit into Vietnam Marks Deployment Anniversary" by Maj. Gen. Ellis W. Williamson and Col. Lawrence W. Jackley, both U.S. Army, retired, about the 173rd Airborne Brigade ("Front & Center," April): the authors state, "It was a war of pursuit, based on the careful use of technical intelligence." Technical intelligence is that intelligence derived from the analysis of captured foreign material or the analysis of scientific advances that have military application.

I was the technical intelligence team leader at I Field Force, which supported the 173rd while it was in II Corps

area, to include the battle at Dak To. Technical intelligence was of limited value to the 173rd. My understanding of the 173rd's capability in this area is that they had some reasonably good combat intelligence. It, like most other units, however, was not very good on technical intelligence, which was not the unit's fault since it was not authorized technical intelligence qualified personnel.

Many people feel that a qualified technical intelligence team should be assigned to division-level units and separate brigades. Unfortunately, we have no plans for this; it may cost us lives down the road.

Lt. Col. William L. Howard
U.S. Army Reserve
Spring Lake Heights, N.J.

PLRS as Solution

■ Col. John T. Burke, in "High-Tech Solutions to an Ancient Problem" (March), clearly presents the case for a land navigation system, particularly for combat vehicles. As the colonel points out, AirLand Battle doctrine is based on maneuver and land navigation is essential to maneuver.

I submit, however, that the colonel has addressed only part of the problem. It is not enough to know where you are and how to get where you are going, for, in dynamic situations, adjacent and senior units and their commanders need near real-time force disposition. In the latter case, there is a solution—the position location and reporting system (PLRS), now in production for the Army and the Marine Corps.

The accuracy of PLRS position data and its versatility and reliability have been demonstrated by Army and Marine Corps units in the field. The ambiguity of force disposition on the AirLand battlefield will be dispelled by PLRS.

Col. R. V. Anderson
U.S. Marine Corps, retired
Newport News, Va.

Is Lighter Better?

■ When the last units of the 89th Light Division ended an 18-hour march at the lip of the Pacific Ocean, I thought that the U.S. Army was through with the light division. The 10th did fight in Italy as a mountain division, but the 71st and the 89th entered combat in Europe as standard triangular units. I hope that modern-day planners have studied the trials of the 71st and the 89th.

The 89th was the first of the World War II light divisions organized. When the 89th Infantry Division was reorganized at Camp Carson, Colo., in August 1943, the 71st and the 10th were partly cadred by the surplus members of the 89th. The 89th Light Division had a table of organization and equipment of only 491 officers, 16 warrant officers and 8,468 enlisted men. Transportation consisted of 267 jeeps and 532 handcarts.

ARMY invites letters to the editor. The subject matter may be about material that has appeared in the magazine or about any topic which the writer feels would be of interest to ARMY readers. The editors reserve the right to edit letters for reasons of style, accuracy or because of space limitation. All the letters must be signed, and while we prefer to carry the writers' names we will consider requests for withholding them if there is a compelling reason to do so.
The Editors

The first test of a light division came during Third Army maneuvers in 1943. The handcarts were replaced by packboards and a quartermaster company of jeeps when it was found that the men could carry more than they could pull in the rough terrain.



The 89th was then moved to Hunter Liggett Military Reservation, Calif. Here, III Corps maneuvers were held. This pitted the 89th (packboards and jeeps) against the 71st (pack mules).

Maj. Gen. John Millikin, then-commanding general of III Corps, called a halt to the series of problems in April 1944. Some of his findings are paraphrased here: a light division cannot operate with the forward edge of the battle area more than five miles from a supply point.

Each regiment used one full battalion to carry supplies to the other two. Engineer and medical units did not have the major items of heavy equipment needed to be effective in combat.

General support artillery was missing. This made division artillery unequal to the mission of supporting the infantry. Special types of divisions complicate the supply and maintenance mission of the corps and field army.

All of these observations are interesting in light of the rush to organize light divisions in the 1980s.

Col. Sam Moorhead
AUS, retired
Minneapolis, Minn.

Colt .45 vs. Beretta

■ I am attending a Department of the Army school at Ft. Bragg, N.C., which includes among its many requirements a research paper. Whether by luck or misfortune, I was assigned the topic of comparing the .45-caliber pistol with the 9-mm handgun. Based on my research and a little training with the Colt M1911A1 .45-caliber pistol, I take exception to some segments of your article, "Beretta to Replace the Colt .45 as Handgun of Armed Forces" ("News Call," March).

You mention that all of the weapo must stand a test of 5,000 rounds; y later you quote a 1977–1980 test in whi the 9-mm Beretta fired an amazing 2,0 rounds between malfunctions. In that te the weapons had to fire 10,000 roun per weapon. There were four weapo per company and the Beretta fired or 28,000 rounds. All four of its weapo could not finish the test. Yes, they did a erage 2,000 rounds between malfunctio —that is great.

The .45-caliber automatic weapons fi 34,400 rounds between four weapons a two of those weapons were damaged; o with a cracked frame at 8,000 rounds a the other with a cracked slide at 6,4 rounds. The other two weapons fired 10,(rounds each. Also note the .45-cali weapons averaged 35 years of age ea No estimate is made as to how ma rounds were fired through these weapo before the test. The 9-mm Berettas w new. So what do you want, a weap with an excellent one-time record or with more than 74 years of dependabi behind it?

There is concern with the change t mm NATO ammunition and its ability fire out of the weapon. Have you e heard any mention of how the weap fires with NATO submachine gun a munition? Probably not lately. What you going to do when you have to Warsaw Pact ammunition out of it? Th is not a whole lot of quality control w it comes to submachine gun ammuniti All of those unevenly mounted or slugs are going to be difficult to feed the ramp of the Beretta.

Did any Army readers see the spe report by Cable News Network (C one evening during March when C demonstrated this fine new weapon its ability to fire after being droppe the mud and then cleaned off with ter?

The individual firing the 9-mm p had to pull immediate action three ti and the weapon still would not fire

A Beretta technician disassembled weapon, cleaned it and reassemble and then it fired flawlessly. The Be representative's only comment was, "W at least you would have a weapon a single shot capability until you h chance to fully clean the weapon." nice to know there are 16 rounds of gle-shot protection. It is a shame the caliber weapon was not put through same test for the television camera

Lastly, if the 9-mm pistol in any b is such an accurate weapon, why are all of those championship shooters there using them? You can pick up marksmanship magazine dealing with sh ing championships and check out type of weapons they, the champ are using. An overwhelming numb

ampions are using .45-caliber weapons! This letter is not written to totally sign the 9-mm pistol as a replacement for r present side arm. But let us not dis- dit the long-standing record of the Colt :911A1 either. It is a fine weapon and re are a lot of soldiers out there who l swear by it. The fact is, the Colt :911A1 is old and it is time, as some , to replace it.

SFC Earnest Holifield
Bragg, N.C.

Tale Worth Telling?

■ Your April issue carried the most veling magazine article I have read this ade. I am referring to "Capt. Reagan the Rescue" by Morton H. Roth. Is it essary for Army to act as a sycophant? t seems to me that 1943 and 1944 uld have generated hundreds of stories re valuable than one about a com- nder of a Hollywood-based unit who not court-martial somebody a few s late from leave.

Maj. John R. Kiely
U.S. Air Force, retired
on, Mass.

■ Morton H. Roth, the author of "Capt. gan to the Rescue" (April), seems to ght in his ability to avoid duty dur- World War II. He credits Capt. (now sident) Reagan with assisting him. Sev- l times a court-martial is mentioned. he fact that the author did not get (or an Article 15) does not mean he uld not have. If captains behaved to- like Capt. Reagan did in 1943-1944, sident Reagan would call them a lib- risk to national defense.

Charles Hyder
ne Mountain, Ga.

burg's *Waffen SS*

As a soldier who fought to defend extend freedom and democracy in rld War II, the Korean and the Viet- conflicts, I think I have the right obligation to clarify an issue that been distorted in the discussions over sident Reagan's visit to a German mil- y cemetery. The issue is the failure to inguish the *Waffen SS* from the *SS* centration camp system and the *SS* ce system.

here is ample documented wartime ence that the *Waffen SS* had an or- zational structure and mission dis- from other branches of the *SS* and it was an operational part of the *rmacht* (the armed forces of the Third h) during World War II.

he *Waffen SS* consisted of infantry, hanized and armored divisions serv- as combat soldiers on the German le fronts. By 1944 and 1945, foreign- outnumbered native Germans in the s of the *Waffen SS*. The *Waffen SS* is considered to have been the largest multinational army ever to fight under one flag.

Diversity of its personnel was the characteristic feature rather than a stereotypical "*SS* type." Its ranks, like those of the *Wehrmacht*, were supplied with manpower by means of persuasion, intimidation and coercion from the countries and regions occupied or conquered by Germany, as well as from Germany itself.

These facts are well-known. They are documented with extensive bibliographic references in many publications, including *The Waffen SS* by George H. Stein.

Whether through lack of knowledge or intentional avoidance, the many highly visible commentators and celebrities, with the exception of Willy Brandt, engaging in the debate over the appropriateness of the President's visit to the German cemetery have made no mention of these significant facts concerning the *Waffen SS*, whose soldiers killed in combat are buried alongside those of the *Wehrmacht*.

The time is long past for us to perpetuate the judicially inappropriate doctrine of collective guilt. The unfortunate debate over the President's visit has been politicized and the issues distorted, and it has unnecessarily damaged the United States and the peace process.

Col. John A. Buesseler, M.D.
AUS, retired
Lubbock, Tex.

■ Editor's Note: *As Dr. Buesseler suggests, the distinctions to which he alludes can be made on legal–constitutional grounds* or de facto *ones, but in neither case is the result likely to be convincing to Holocaust victims, Allied combat veterans of World War II or their legatees. As the Bitburg cemetery controversy showed, the memory of SS deeds still evokes passions about which few observers can be —or are allowed to be—neutral, so that judgments about the relative guilt of the armed* (Waffen) SS *are exceedingly difficult. The process is complicated by the fact that the debate is not a new one, but began in the late 1940s, as soon as the Nuremberg Tribunal (under the then-unquestioned theory of collective guilt) designated the* SS *as a whole as a criminal organization, mere membership in which was a punishable offense.*

Ever since, Waffen-SS *apologists have striven to disassociate the combat formations from the* SS *police functions, extermination operations and concentration camps, and to obtain for former* Waffen-SS *members the status of regular military veterans in postwar Germany.*

Further distortion of the record resulted from the efforts of early spokesmen for the historical interests of the German Army to distance themselves from the Waffen SS, *even to the point of denying that organization's record of combat effectiveness. Finally, the whole question is confused by the Byzantine organizational and legal complexities of* SS *chief Heinrich Himmler's drive to create a "state within the state"; things were rarely as they seemed within the welter of overlapping jurisdictions, unclear lines of command and coordination and deliberate ambiguities.*

The various branches of the SS *evolved in the late 1930s, the main ones being the* Totenkopfverbände *(Death's Head detachments), which provided guards for the prewar concentration camp system, and the* SS Verfügungstruppe *(literally, "troops for disposition," in the sense that their oath was to Adolf Hitler personally, not to the Nazi Party) which were armed, tactically organized units with military training and security and ceremonial duties.*

Apart from these full-time units, the balance of the organization, consisting chiefly of reservists, was designated as the Allgemeine *(General)* SS. *During the war, the latter gradually disappeared as its members were drafted into the regular armed forces or the* Waffen SS, *remaining chiefly as a source of the honorific titles and commissions which Heinrich Himmler liked to bestow.*

The Verfügungstruppe, *which included Hitler's bodyguard regiment (the* Leibstandarte SS *"Adolf Hitler"), participated in all of the prewar Nazi military adventures, and in the Polish and French campaigns, assuming the title* Waffen SS *in 1940. Despite Hitler's distrust of the German Army and its senior leadership—it was the least politicized and politically minded of the traditional services—it was evidently not his intention to create a politically reliable parallel ground force. Nevertheless, this is what the* Waffen SS *became when Heinrich Himmler's empire-*



"The brigade commander called, but I can't remember what he told me not to forget."

SCIENCE/SCOPE

MG Defender helicopters will be outfitted with two advanced electro-optical systems so aircrews can fly low-level night missions over rough terrain and fire TOW antitank missiles from behind protective cover. The two Hughes Aircraft Company systems are the Hughes Night Vision System (HNVS) and the TOW Mast-Mounted Sight (TMMS). The HNVS is a computer-controlled forward-looking infrared system that aids aircrews 24 hours a day during low-level, nap-of-the-earth, or bad-weather flying, navigation, target detection, and search and rescue. The system is located in a turret under the helicopter's nose and can be linked electronically to the pilot's helmet to move in the same direction the pilot moves his head. The mast-mounted sight lets the crew fire TOW missiles from behind hills and trees, while exposing only the sight to possible enemy detection. The sight's stabilized optics compensate for helicopter movement and vibration of the rotor blades. Defender helicopters are built by Hughes Helicopters, a subsidiary of McDonnell Douglas Corp.

A new laser that better penetrates battlefield smoke, haze, and dust will let tank gunners determine the range of any target they can see with a thermal imaging system. The laser is the first carbon dioxide laser rangefinder developed in the U.S. for tactical military applications. It determines range based on the few millionths of a second it takes a laser pulse to reach a target and reflect back. During advanced development tests, the rangefinder demonstrated greater performance under obscured battlefield conditions than the solid-state lasers currently used for military rangefinding. Because the laser and the thermal imaging system operate in the same wavelength, they have the same performance characteristics under battlefield conditions and bad weather. The Hughes laser is also harmless to the human eye and can be safely fired during training exercises. A development model has been configured for evaluation in the M1 Abrams main battle tank.

Saudi Arabia's army will be able to pinpoint the source of artillery fire with an advanced weapon-locating radar. The TPQ-37 Firefinder radar radiates pencil beams from an electronic scanning antenna to create an electronic curtain over a battlefield. It detects rockets, artillery, and mortar shells as they pierce this curtain and backplots their paths to determine the location of the hostile weapons. This information is forwarded to friendly weapons for counterfire, sometimes even before the incoming rounds hit. The TPQ-37 operates automatically and can be monitored by one soldier. Hughes is delivering Firefinder radars to Saudi Arabia.

Early production of the Amraam missile will be enhanced by the use of a workcell concept that teams an assembler, tester, test engineer, and missile design engineer in the same work area. This assembly/test workcell will allow the team members to work together efficiently and head off problems that could increase costs, affect reliability, or delay deliveries. Hughes designed and developed the advanced medium-range air-to-air missile for the U.S. Air Force and Navy.

An antenna system made entirely of composite materials is operating on LEASAT, a communications satellite launched last year from the space shuttle. The antenna's structural elements and fittings are made of carbon powder, fiber, and epoxy. This approach eliminates metal pieces that cause spurious signals when impinged by many different high-energy radio signals. The carbon powder also improves the conductivity of the outer surface of the antenna and prevents arcing, the harmful build-up and discharge of static electricity. Hughes built the 7.5-ton LEASAT for operation by a subsidiary, Hughes Communications Services, Inc. The Navy leases capacity for all U.S. military services.

For more information write to: P.O. Box 11205, Dept. 70-2, Marina del Rey, CA 90295

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lding impulse was given free rein, reach- a peak strength of 600,000 men and divisions (albeit, many of these were ıped-up regiments and brigades).

With a reputation for utter ruthless- s and disregard of casualties devel- d in the brutal warfare of the Eastern nt, the Waffen SS became the back- ne of the defense of Germany during 3–45, as "Hitler's fire brigade." While chief Himmler's frustration in his com- ition for manpower with the regular ıed forces caused him to recruit the e "Eastern European" SS, it is fair to that most of these foreign units were et military liability, consuming scarce ıpons and supplies to little purpose; fighting core of the armed SS was in original native German divisions, the tern European volunteers and some he ethnic German units.

levertheless, in concentrating on the ıbat record, Waffen-SS apologists ne- t to mention the many connections veen the front-line units and the in- ous SS police state:

Virtually the entire prewar contin- t of concentration camp guards was ted into the Waffen SS in October 9, and later formed the cadre of the SS Armored Division "Totenkopf," manded by Theodor Eicke, chief of concentration camp system during 4–39.

New Totenkopf units created at the nning of the war conducted deporta- s and executions during 1939–41 and e then converted into SS infantry. s, as Professor Stein notes, "by the of 1941 . . . there were tens of thou- ls of men serving in the front-line ıations of the Waffen SS who had icipated in, supported or witnessed inal acts."

In order to protect the wartime con- ration camp guards from conscription pice in the other branches of the SS not recognized by the armed forces ılfilling the military obligation), SS Himmler designated them as part of Waffen SS—they carried Waffen-SS ooks and wore Waffen-SS uniforms. e Waffen-SS apologists dismiss this s as a nominal legalism, there was, rtheless, regular, if limited, rotation ersonnel between the front-line units the concentration camp system, es- ılly involving men no longer fit for service.

As a means of discipline in Russia, ombat soldiers facing charges or sen- d for military offenses were often ı the option of a posting to the infa- s police Einsatzgruppen, exterminа- units which killed nearly a half-mil- ivilians in the last half of 1941 alone.

The Waffen-SS force structure in- d such notorious formations as the onderkommando (Special Command) Kaminski, a Russian–Ukrainian antipar- tisan militia unit, and the Dirlewanger Brigade, originally recruited from con- victed poachers and then simply from criminals of all kinds. The behavior of these units during the suppression of the 1944 Warsaw uprising was so brutal that field commanders prevailed on Hitler to order their withdrawal.

What of the record of Waffen-SS tacti- cal units in the field? The list of military and civilian atrocities is rather long:

- American veterans will most readi- ly recall the massacre of U.S. prisoners at Malmédy, Belgium, in December 1944, but there were other such incidents in- volving prisoners taken from the armies of the Western Allies (British prisoners at Le Paradis in 1940, Canadian prisoners in Normandy in 1944) and countless such episodes on the Eastern Front.
- Large-scale killings of uninvolved civilians took place under the cover of antipartisan operations by Waffen-SS field units, particularly in the no-quarter-asked- or-given warfare in the Balkans and be- hind the lines in Russia, where behead- ings were common and the flamethrower was used as a means of execution. In the summer and fall of 1944, the 2nd SS Ar- mored Division "Das Reich" brought this brand of antipartisan warfare to southern and central France.
- Mass executions of civilians uncon- nected with military operations of any kind and serving no apparent purpose other than that of terror and intimida- tion: Oradour, Klissura, Boves, Minsk, Kharkov—the list is again long.

While the polyglot nature of the late- war Waffen SS is well documented, it is a fact of no special significance in post- war crimes issues. It will not support the claptrap promoted by some Waffen-SS apologists that the field SS represented an anti-Bolshevik crusade by a "united nations" of western Europe, and is there- fore a legitimate forerunner of the North Atlantic Treaty Organization.

Professor Stein confirms that there was "no single Waffen-SS type." He writes, "rubbing shoulders in the ranks of the Waffen SS were young idealists, hard-bit- ten soldiers of fortune, dull-witted yokels, dehumanized concentration camp guards, flaming-eyed Hitler Youths, bewildered conscripts, hard-core Nazis and thousands of foreigners who understood little or no German, let alone Nazi ideology."

Yet, he notes, the Waffen SS had a dis- tinct character, "one that served to set it apart from the Army." At its mildest, that might be described as a buccaneer spirit that grew up in the freebooting Anabasis through the chaos that was wartime Europe, shoring up one Nazi military disaster after another. The SS- trained officers and NCOs often added a nihilistic spirit of recklessness, at its most extreme a romantic infatuation with dan- ger and death.

Tough, savage, bloodthirsty, ruthless— these all apply to the Waffen SS, which operated in a moral vacuum, without any sense of limits. It is, in fact, the single most telling modern object lesson in the consequences of an "elite" military orga- nization gone totally out of control.

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Buzzwords Notwithstanding, Reserve, Active Components Are Not Exactly Alike

Needed: A Workable Definition of 'One Army

By Col. James W. Shugart III

The nation's reserve components account for two thirds of its military establishment's combat service support and 70 percent of its nondivisional combat forces. In short, the Army cannot go to war without the immediate involvement of its reserves. The precariousness of this situation has resulted in serious questioning of the wisdom of transferring responsibility for national security from the active to the reserve components.

Front & Center

In its report published in 1984, the Reserve Forces Policy Board acknowledged the current situation and stated that the reserves should no longer be considered as such but rather as an integral part of the total national military force.

At the Department of Defense level, transferring national defense responsibilities to the reserve components is an inexpensive means of meeting the national risk. Reserves, while requiring the same training and equipment as the active Army, are less costly to pay, feed and house since they are called for duty only a little more than a tenth of the time annually as compared to the active component.

In fact, the principal reason for integrating the role of the reserves into the total national military force can be attributed to an erroneous translation of a phrase used to raise the acceptance level of the reserve components in the total force role—"modern, one Army." Most defense planners, as well as active-duty and reserve components service members, mistakenly interpret the phrase to mean that the components are interchangeable.

The result is that the active Army sheds risk responsibility to the reserves without hesitation, saying, in effect, "The reserves are just like us. They can handle anything we can at a lot less cost." Reservists, likewise, hear "modern, one Army," and translate it: "We are exactly like the active; therefore, we are capable of doing anything they do, as well as they do it." Both sides delude themselves about the capability of the reserve to perform satisfactorily in a sustained military mission. The "Capstone" program, likewise, aligns reserve organizations with active Army units stationed overseas, placing the reserve commander on equal status with his active-duty counterpart.



The reserve components have relatively little time for collective training: a mortar crew of the Army Reserve's 3rd Battalion, 87th Infantry, on the range.

Making the two components interchangeable adversely affects both; however, it is hardest on the reserve components. While gaining prestige and heightened visibility from its current status, because of its past experience, its members are reluctant to point out shortfalls which are readily apparent when missions are weighed against resources. The drilling reservist will not refuse a mission, despite obvious shortcomings to the contrary.

Being tasked by the active Army to perform to standards beyond the capability of his unit, the reservist compensates for the shortfall with a unit status report which is upgraded beyond the realm of the possible to a level where the reserve is indeed equal to the active force in each measurable aspect, and with annual training report cards in which negative comments are tolerated by neither the reserve nor active Army.

A more workable definition of "modern, one Army" must be provided. By redefining the phrase in terms understandable to both components, integrity will be introduced to their relationship, missions will be assigned on a more realistic basis and a constructive dialogue will replace the largely one-way communication that now exists from the active force to the reserve.

To think that "modern, one Army" means the components are interchangeable is fallacious. The active Army is composed of full-time professional s diers while the reserve is composed soldiers who are professional in their vilian roles and occupations 90 perc of the time and in their military spec ties ten percent of the time.

If the components are interchangea the active Army could be disestablis entirely and replaced with reserves fo lot less cost. The interchangeability components can tend to make rese critical of the active force, since it s posedly can perform the active mis in only a tenth of the time. The ac Army often resents the part-time sold self-assessment that he is equal to a time professional.

The components are trained in ways which are fundamentally differ From the outset, the reservist, whe officer or enlisted, is exposed to the tive Army in an initial entry training vironment. The focus at this stage i individual skills. Collective trainin the responsibility of the initial unit o signment.

While the active Army soldier rep to that unit and begins team trai while reinforcing the individual skills veloped at the active Army schools, reservist is assigned to a unit where lective training is, at most, introd during the 12 annual weekend drill ods and accomplished during the 14 annual training (AT) period. After a month reception and integration prog

drilling reservist may be exposed to col-tive training in one or two monthly ills before AT.

These exposure periods may be as much five consecutive four-hour training pe-ds, known as multiple unit training semblies, or as little as a single unit ining assembly of four hours. The an-al training period is usually 14 consec-ve days. However, since time is such precious commodity in the reserve, in-idual training and testing on common dier skills (for example, weapons quali-ation, chemical defense proficiency and lividual administrative processing, such periodic physicals and official photo-aphs) are accomplished in addition to lective testing, such as an externally ministered Army training and evalua-n program. The result is that the drill-reservist has little time to devote to lective training and the training is not ays conducted in a sequence from ple to complex or from individual to tion to team.

part from the monthly and annual drill periods, the drilling reservist eives additional skill training through respondence courses or the Army Re-ve school system. In either case, the phasis is on individual effort with little erence to group norms or collective formance. While the selected reservist ght attend active Army courses in lieu annual training or, in exceptional cases, ght attend, for an extended period, the ve Army's Sergeants' Major Academy Army War College, he brings his ex-ience of individual effort and initia-to the active-duty training arena.

His reserve career experience has been ked by unilateral, isolated actions en on his own initiative without refer-e to superiors, peers or subordinates. ving been promoted through the ranks a result of being a self-starter who is to accomplish a mission with limited urces, contribute to the overall unit sion without disturbing its operating ironment and receive high marks from active-duty raters during AT, the drill-reservist assumes that he is emulating active-duty soldier and that his skills interchangeable at both the individu-nd collective level, when, in fact, they not.

there is a weakness in the reserve ponents, it is the absence of team ning, which is reflected directly in coordination and operations above pany, battery or troop level. The allocated for reserve training is not cient to produce large-scale team or force operations reflecting well-trained manders and coordinated and inte-ed staffs.

s a direct result of his military expe-ce, the reservist excels in stretching inadequate resources to accomplish a mission. The process, described by a skilled practitioner as "entrepreneurship," is understood as making ends meet to satisfy military requirements, or solving problems during operations which were unforeseen in the planning process without referring the problem to the higher reserve headquarters or, in the case of annual training, the supporting or supported active force.

As an example of the entrepreneurship practiced in the reserve components, the Army's Training and Doctrine Command tasked Army Reserve training divisions to conduct annual training at an Army



training center at brigade level in order to gain a fuller appreciation for the mobilization mission. Four reserve battalions followed each other in two-week intervals, thus displacing a single active-duty battalion and assuming responsibility for its mission for eight weeks.

While the reserve brigade commander performed an adequate mission analysis and programmed his resources to cover the entire period, his brigade headquarters had neither the strength nor depth to enable him to exercise close supervision over his units as they changed to ensure that the soldiers being trained were not subjected to shocks precipitated by the cadre change every two weeks.

It was also apparent to this reserve commander that the two-week AT for his headquarters was not adequate to cover the eight-week cycle of his battalions' rotation. He could not sacrifice his professionalism in his civilian occupation to ensure that the subordinate reserve battalions were performing to standard. He determined which were the critical junctures where both his and the brigade staff's presence at the AT site were required and devised a telecommunications net at his expense to resolve command problems which arose during the period he could not be physically present.

Similarly, the brigade had sufficient drill sergeant resources to accomplish the mission; however, cross-leveling between battalions was required to ensure that each battalion was capable of meeting its individual mission. As viewed by the active force, the entire eight-week AT period appeared to be a smooth-flowing operation marked by orderly transitions and by close, continuous coordination and command supervision at all levels.

From the reservist's perspective, at battalion level, the AT provided an excellent opportunity for drill sergeants and company headquarters to perform a two-week portion of their 13-week mobilization mission. At the reserve brigade level, AT was a continuous entreprencurial, "cut-and-paste" operation accomplished via long distance to meet satisfactorily the requirement of annual training.

In his after-action report, the reserve brigade commander addressed the horizontal displacement posture, citing its inherent command and control problems for the first time. The active Army developed the mission which was accepted by the reserves without question. The problems the mission generated were solved internally by the reserve brigade without recourse to its division headquarters for solution, or to its active counterpart for support.

That the mission was executed to the satisfaction of everyone concerned is a credit to the initiative and dedication of the reservist; however, the substitution of entrepreneurial, make-shift arrangements for staff analysis and coordination reinforced the dominance of the individual over the collective effort, as far as the drilling reservist was concerned.

Since the active force had nothing but praise for the final product, the reserve component was convinced that successful operations are managed by a continuous jury-rig on an individual, part-time basis. The active Army did not perform its role of training the reserve. The model the reserve tried to emulate was misinterpreted as one of individual performance rather than teamwork.

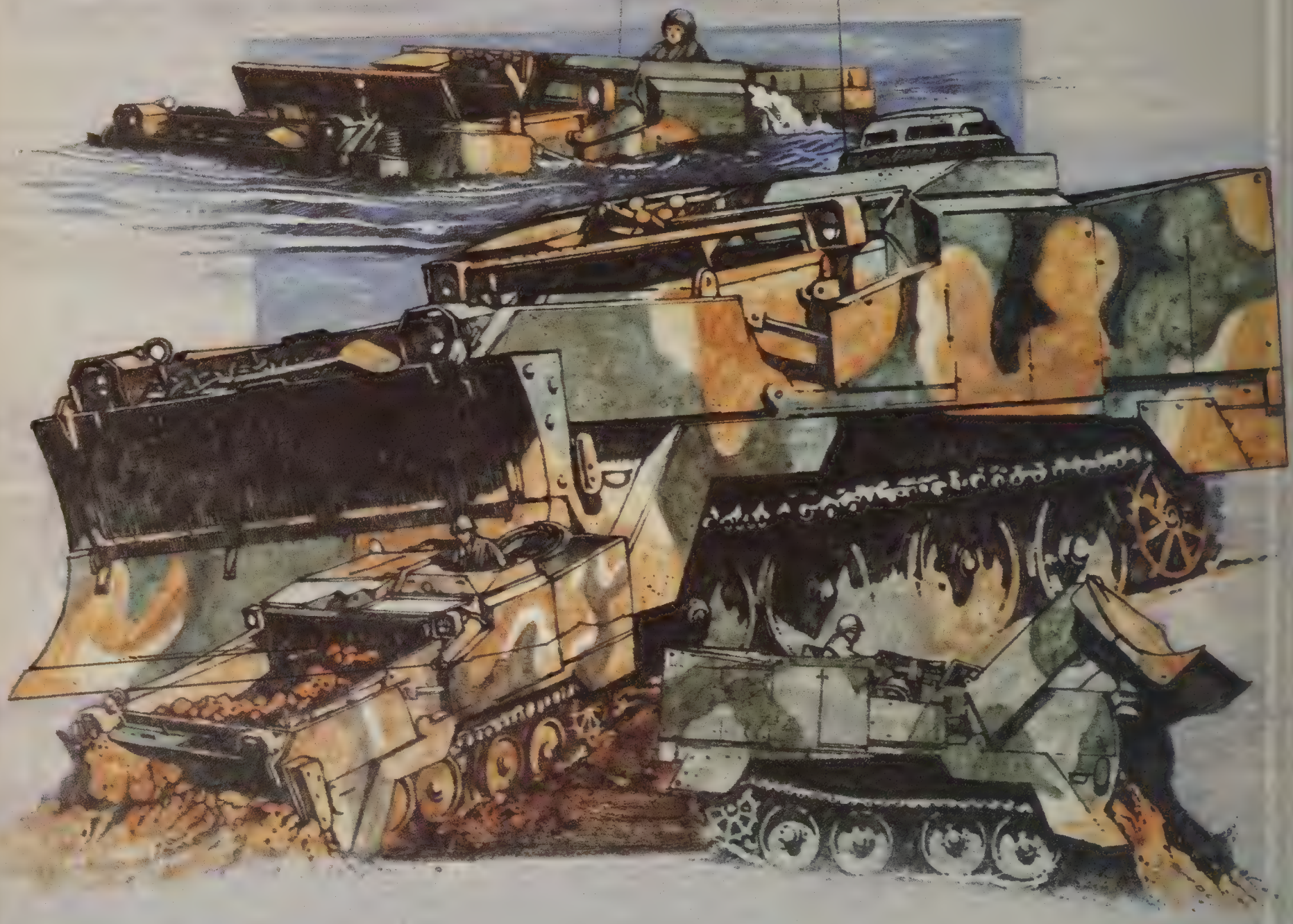
This is not said to belittle either the reserve components or the contribution they make to national security. Indeed, the reserves, when called to active duty, bring a wealth of resources with them which the active force does not have. While dedication to duty and enthusiasm for the job to be done are common to both, the reservist's background, his civilian career, his position within the com-

This Month's Cover



Soldiers of the 7th Infantry Division (Light) move out during Exercise Team Spirit '85. The unit—the 1st Platoon, B Co., 2nd Battalion, 32nd Infantry—has just crossed South Korea's Han River in rubber boats. The 7th, stationed at Ft. Ord, Calif., is one of the divisions which is the subject of Gen. William E. DePuy's article on the light infantry in modern combat, beginning on Page 26. *(Photograph by S.Sgt. Phil Tegtmeier)*

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nity, his ties to his neighbors, and his owledge of the character and talents of fellow unit members with whom he drilled and served for years provide lepth and continuity to reserve units ich the active Army does not share. hese same strengths will enable the erve components organization to train he active Army standard and to de- y to accomplish its mission within a imal amount of time in the event of bilization. In fact, what "modern, one ny," actually means is that both re- e components and the active Army st train to the same standard.

omparing the active Army to the re- es is not comparing apples to oranges, rather comparing Jonathan to Golden icious apples. Each, while an apple, its distinctive characteristics and should used in the role for which it is best ed.

s the reserve components are integrat- nto the total force, the definition of t "modern, one Army," means must nderstood fully by the active force re more responsibility for national is transferred to the reserves and be- the reserves accept responsibility for new missions from the active Army. reserve components commanders must orm a mission analysis and provide "Capstone" headquarters with an rate estimate of where their unit will short if not provided sufficient re- ces to train to the new standard.

ne active force should also recognize dilemmas a reserve commander faces n confronted with an additional mis- . First, his soldiers must train to an tional standard with no more time is presently available for the current ion. Second, allocating additional through the budgeting process does solve the reserve components train- problem. In fact, it may compound ce employers, who support the drill- eservist with current training require- s, may be reluctant to sacrifice their ness interests to the national defense nd their current commitment.

rthermore, the reservist can ill af- to take time from his civilian voca- which puts bread on the table; his cipation in civic activities, which as- his status in his community; or his y life. Third, if allocated more full- manning positions, the additional e Guard/Reserve (AGR) positions personnel resources without the req- training to accomplish the mission. e short run, the additional mission not be met; and, while the new force ined to standard, the former mis- will be ignored. The active force consider the training distractions n are peculiar to the reserves before ning a new mission.

(continued on Page 16)

Paul H. Nitze Named AUSA's '85 Marshall Medal Recipient

The Association's most prestigious award, the George Catlett Marshall Medal for distinguished public service, will be presented at this October's Annual Meeting to Ambassador Paul H. Nitze, special adviser to the President and the secretary of state on arms control matters.

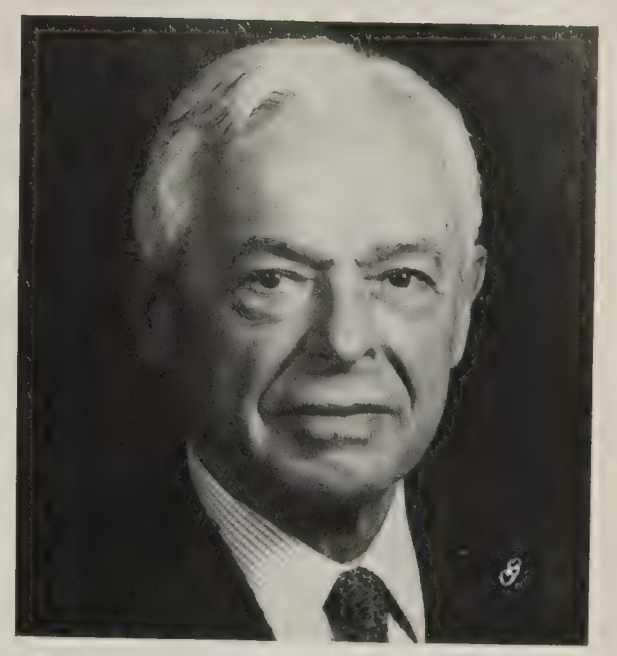
"Paul Henry Nitze's public career, spanning over four decades, has placed him at or near the pinnacle of the policy process during some of the most formative and crucial moments in this country's history," writes international affairs scholar Steven L. Rearden.

A native of Amherst, Mass., Mr. Nitze attended Harvard University, where he graduated in 1928. In 1929, Mr. Nitze joined the Wall Street investment banking firm of Dillon, Read & Co., acquiring a reputation as a gifted financial analyst during the depths of the Depression and rising to become vice-president of the firm. He came to Washington, D.C., and began his career in public service in 1941, at the prompting of friend and business associate James V. Forrestal, who had been named special assistant to President Franklin D. Roosevelt.

During World War II, Mr. Nitze held several defense and foreign affairs positions, first as aide to Mr. Forrestal and adviser to the War Department on selective service matters. After Pearl Harbor, he became financial director of the Office of the Coordinator of Inter-American Affairs and, during 1942 and 1943, served as chief of the Metals and Minerals Branch of the Board of Economic Warfare. From 1944 to 1946, Mr. Nitze was vice chairman of the U.S. Strategic Bombing Survey, an experience that impressed him with the need to get control of strategic weapons. For his service in this position, President Harry S Truman awarded Mr. Nitze the Medal of Merit.

Mr. Nitze served with the State Department for the next seven years, beginning in the position of deputy director of the Office of International Trade Policy. He was named deputy to the assistant secretary of state for economic affairs in 1948 and, in the following year, he became deputy director of the State Department's influential policy planning staff. In 1950, he took over directorship of the policy planning staff, a post he held for three years.

Mr. Nitze left government service in 1953 to become president of the Foreign Service Educational Foundation in Washington, D.C. He remained in that position until 1961, having been selected as



Ambassador Paul H. Nitze

assistant secretary of defense for international security affairs under the Kennedy Administration. In the fall of 1963, President John F. Kennedy nominated Mr. Nitze to be the 57th secretary of the Navy, a position he held until June 1967 when he was named deputy secretary of defense by President Lyndon B. Johnson.

With a change in administrations, Mr. Nitze resigned from the deputy secretaryship in January 1969, but was soon after appointed representative of the secretary of defense to the U.S. delegation to the Strategic Arms Limitation Talks (SALT) with the Soviet Union. He served as a SALT negotiator until the summer of 1974, at which time he resigned to become a consultant on defense policy and international relations for various government agencies and private firms.

In 1981, Mr. Nitze became head of the U.S. delegation to the Intermediate-Range Nuclear Forces Negotiations with the Soviet Union, which convened later that year in Geneva, Switzerland. He was serving in that position in December 1984 when he was named special adviser to the President and the secretary of state on arms control matters.

Mr. Nitze has also served as chairman of the Advisory Council of the Johns Hopkins School of Advanced International Studies; as a director on the boards of Aspen Skiing Corp., Twentieth Century-Fox Film Corp., Schroders Inc., American Security and Trust Co., the Ethics and Public Policy Center and the Atlantic Council of the United States; as trustee *emeritus* of the Aspen Institute for Humanistic Studies and the George C. Marshall Research Foundation; and as chairman of policy studies, Committee on the Present Danger. □

(continued from Page 15)

The active Army must also be sure that the reserve components train to the active Army standard. As more active-duty positions within the reserve are replaced by AGRs to pay the bills of the "Army of Excellence," it is possible that the reserve components will develop their own standards, which will fluctuate depending on the resources available. The policy of replacing active-duty soldiers with AGRs does not result in a balanced evaluation. Although he is a full-time soldier, a member of the AGR views the reserve components and the active Army from the drilling reservist's perspective.

Integrity must be the foundation of the active-reserve relationship. The active force must be frank in its evaluation of the reserve and state candidly that, while the reserves are first-team members in



every sense, they are not starters. If a football analogy is permitted, today's reserve components can be likened to special teams. In this role, they have capabilities which exceed those of the starters. However, using a special team as a starting offense or defense calls on them to perform beyond their capability and is fraught with danger.

The active Army must remain the coach who provides the training model, trains the team to the same performance standard, judges where additional practice and training are required, allocates resources to meet the established performance objectives, calls both the appropriate offensive or defensive set, and uses the player resources at his disposal to execute the game plan. When employed in the proper balance with strengths and weaknesses considered, the active and reserve team will prove unbeatable. □

COL. JAMES W. SHUGART III is the senior Army adviser to a major U.S. Army Reserve command. He received a bachelor's degree and his commission as an infantry officer from Washington and Lee University and a master's degree from Duke University. He is a graduate of the Armed Forces Staff College and the Army War College, and has served in various infantry command and staff assignments in U.S. Army, Europe, the continental United States, Alaska and Vietnam.

Watching and Waiting for V-E Day

That Last Long Week of the Wa

By Bill Herman

Wars do not seem to stop neatly. Thus, World War II in Europe did not grind to a halt; it *rumored* itself to death. It took almost seven V-E Days to get it right.

It all started in Munich, which was finally taken on 1 May, 1945. But the only thing clear about that day was that it snowed. Several U.S. divisions claimed capture of the Nazi bastion. So while the commander, 45th Division, waited for members of the Seventh Army press camp at "Hitler's Beer Hall" (*Hofbräuhaus*), the commander, 42nd Division, enticed them into the "other" historic beer hall (*Bürgerbräukeller*). The beer and trophies flowed in both places, and all over Munich as well, as GIs and DPs (displaced persons) joined "honorable" *Münchners* in looting the wine cellars of the prominent hotels and restaurants.

Then word spread that the 45th Division was relieved of further combat missions and encouraged to "get comfortable" in Munich.

Pow! V-E Day! Why *else* would a highly decorated division be relieved? The Nazis must have quit.

Then we heard the sound of the "88s," then heavier artillery from outside the burning city. Somebody was still shooting at us (on *V-E Day?*).

As an armored division liaison officer, I was ordered to hound corps headquarters to try to get the division relieved from support of two infantry divisions so, the word was, we could celebrate V-E Day together.

A side task was to help locate the crews of tanks and vehicles found parked near less severely damaged apartments from which came the joyous sounds of bilingual partying. Adding to the relaxed mood was Radio *München* itself, which was playing Glenn Miller and the Dorsey brothers. Special Service troops of the 45th Division found the radio transmitter and studios undamaged—in fact, the tubes were still warm—so they went on the air. Thus was born the long-running, popular Armed Forces Radio show called (what else?) "Luncheon in *München*."

That night I wearily located my division headquarters and started to report on the obvious advent of V-E Day when our G3 (operations officer) snarled, "Skip V-E Day. Get back to corps and pick up the 'ops' order—we're attacking in a few hours." For emphasis, a lone 88 sent a round hissing into a nearby house. Then another. Then I left. The trip to Dachau (corps headquarters) and back was ligh ed most of the way by Munich afire

The next day, our units worked at t ducing or bypassing lingering German re guards and strong points. Late that nigh I was sent back to corps, which had re cated, to bring in an important messa —obviously the V-E Day announceme Everything pointed to it.

I was right. I dashed through Muni again to deliver the word: "Halt all co bat action."

"Nope!" barked the G3. "Get back corps—a courier just changed that ord We're planning new task forces to atta the redoubt; the Germans are massing the Alps, reinforced from Italy. Be gon More V-E Day celebrations were hal abruptly.

Activities the next day did not reac very high pitch. I eagerly brought tidi from corps suggesting "low-intensity erations . . . do not return fire unless avoidable." The G3's jaw quivered. "U avoidable? How do you *avoid* it wh half an *SS* division still jumps on one our battalions? Stop the cease-fire ta People are still shooting at us."

V-E Day number four was about same—some cautious movement, sc tered firefights and growing doubts fr intelligence that the famed redoubt the Alps and the "Werewolves" (parti movement) really existed. My brie that night was based on: "Halt in pl Ground weapons! Prepare POW coll ing points!"

"For *who*?" screamed the G3. "Te to these guys." Again he dragged m his precious map, stabbing his finge different red-splotched areas where siderable action was under way. "So body's still shooting at us."

While cautious celebration was in nature of "rumor parties," movement ward southern Bavaria slowed and tu to drive east toward the Austrian bor With the Russians encircling Vienna, roads in Bavaria were clogged with m ment to the west.

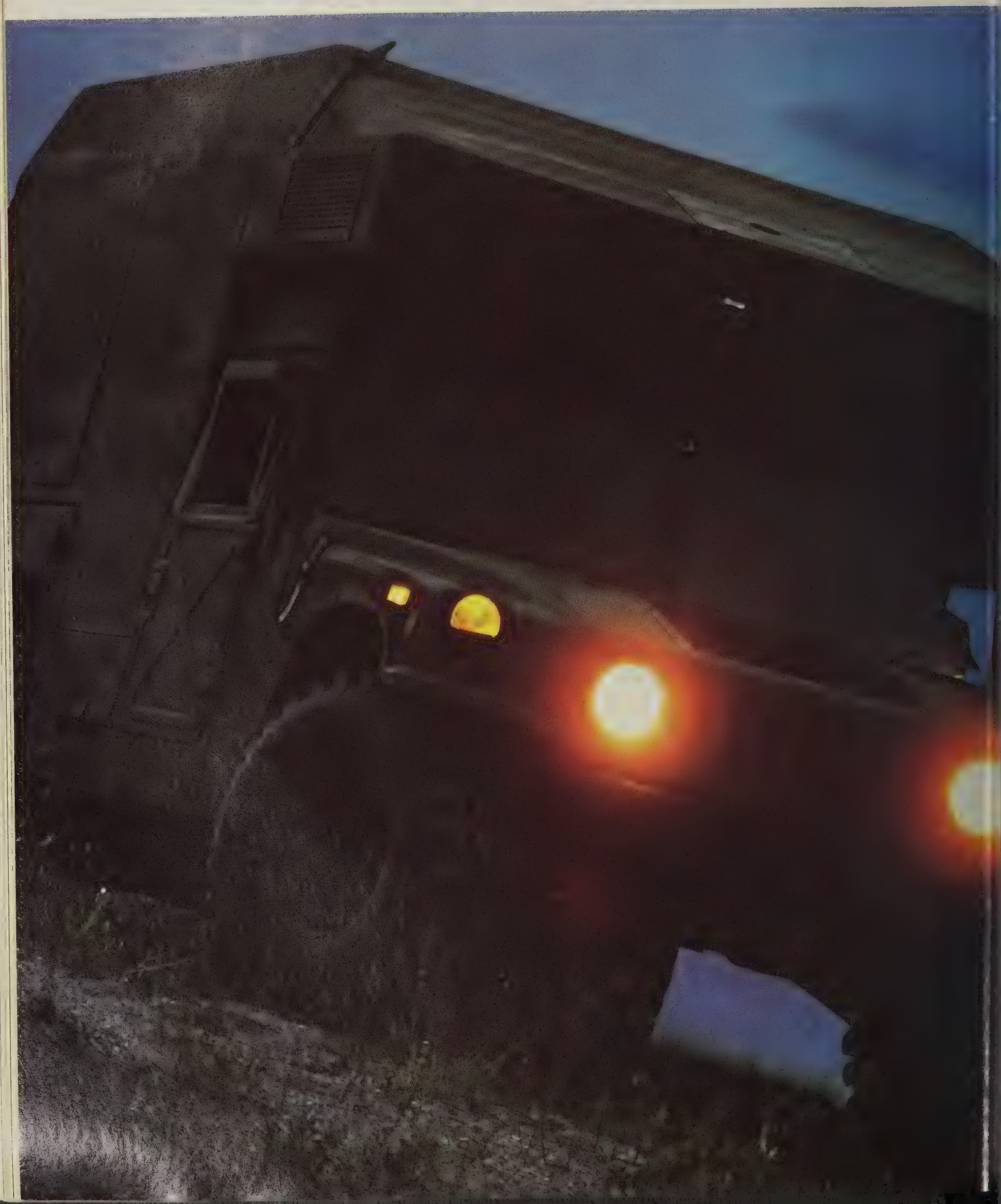
U.S. reconnaissance task forces ru past entire divisions which started su dering, beginning with units of Germa eastern European allies. Then the deci ed *Wehrmacht* started passing thr what "lines" still existed. That night, a with what was by then called my " cease-fire briefing," I tried to get th to predict the imminence of V-E D

"I know, I know," he snapped. " ler's dead, we've met the Russians there's a German surrender team s where, but. . . ." (I was dragged t

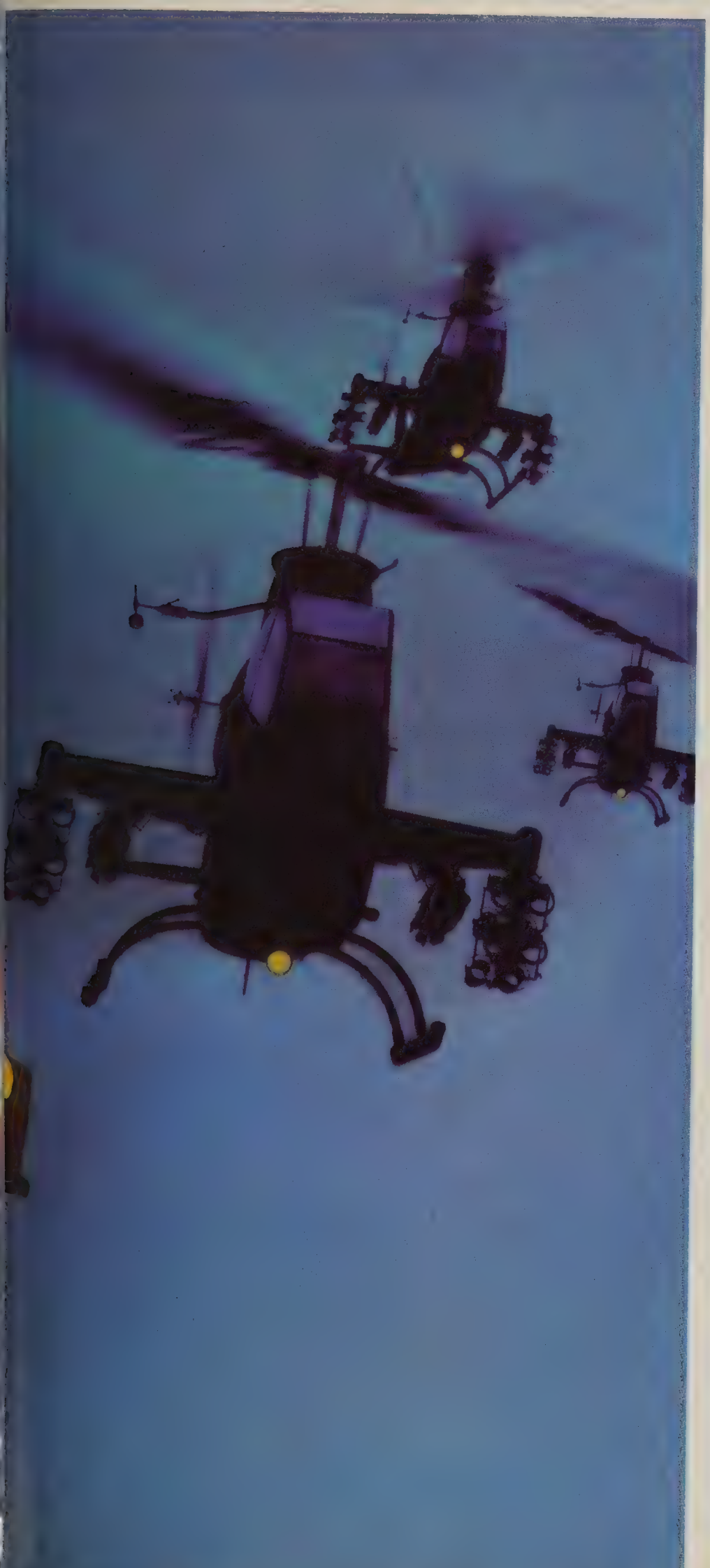
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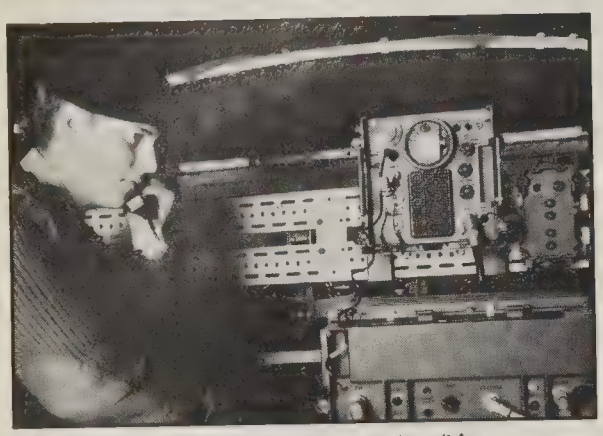
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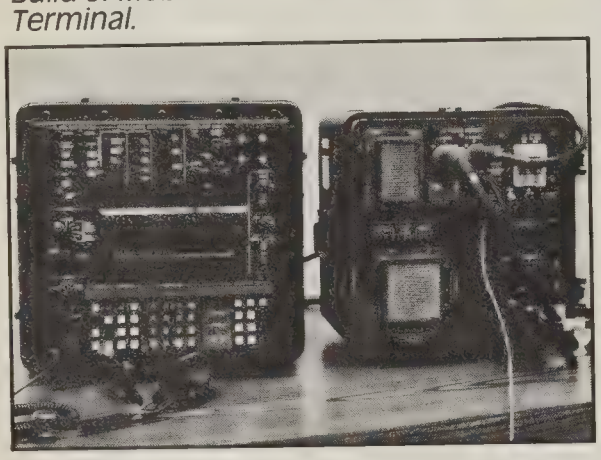
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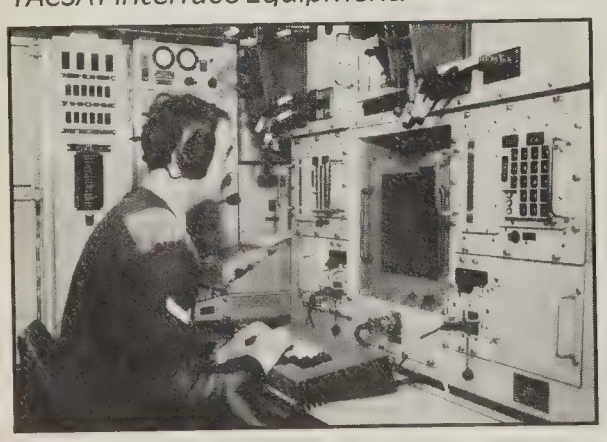
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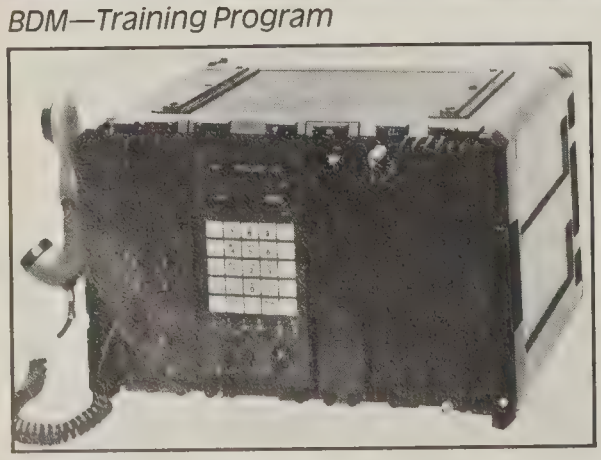
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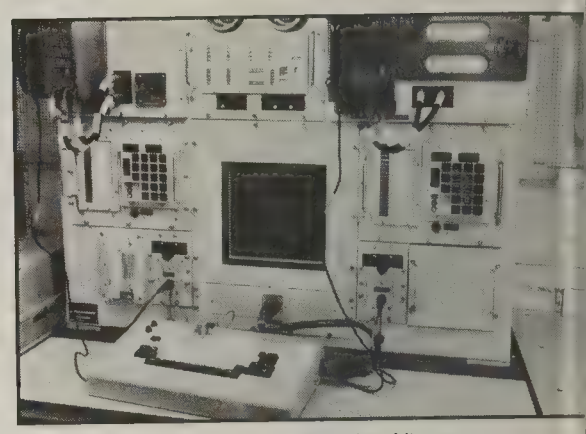
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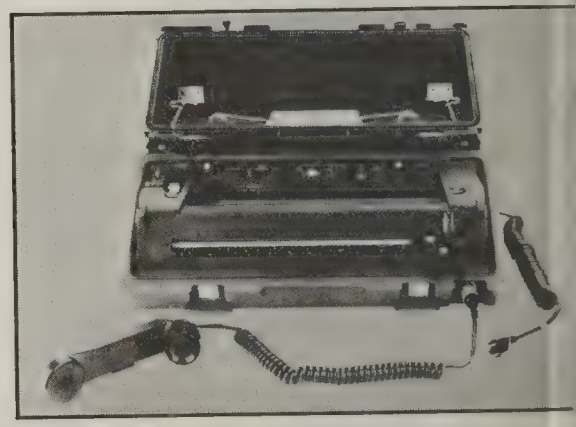
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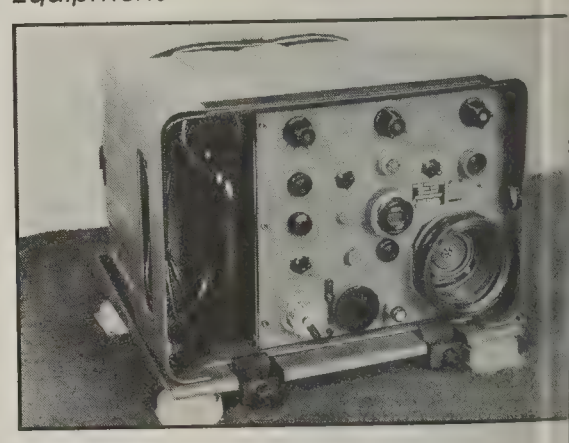
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nap again.) "We're in a helluva firefight here—and here. They even counterattack. Go back and ask corps if we're talking about the same war." Another V-E Day had eluded us, but impromptu celebrations kept breaking out and being canceled.

The next day, while our units approached the Austrian border, the most striking preliminary to cease-fire occurred. All movement was westward away from the Russians, and endless, silent streams of surrendering German troops shuffled toward a huge collecting point in the thick forest south of Munich. The wounded marched along in trucks, the sober-faced generals in run-down sedans or motorcycle sidecars. The roadsides were lined with GIs and DPs who urged the Germans on with appropriate remarks.

One German unit, however, was led by a tall, slim lieutenant in crisp dress uniform, carrying a white flag on a polished staff. His men, in contrast to the shabby horde around them, were also well scrubbed, in full uniform and gear —and carrying rifles slung upside down.

The catcalls from the roadside died out as the German unit marched up smartly, eyes straight ahead, their firm boot beats causing the straggling column to open up and let them through. Incredulously, GIs and officers applauded this unit so determined to surrender honorably—as soldiers.

As they marched off toward the west, one GI was heard to remark, "Sharp, but I wonder if they're really surrendering. They still have their guns—hope somebody's picking them up back there." He voiced the thoughts of many who watched the seemingly endless movement of the defeated.

The interrogator and counterintelligence teams were overburdened sorting through this surge of former enemies, known and unknown. Arrogant complaints from German officers were met with slouching disinterest, especially with the generals who tried to invoke rank or protocol. Many German generals sent their aides ahead to arrange a meeting with a U.S. officer of equal rank. (Many were told, straight-faced: "There's a general's reception point down the road. Bring your man in.")

All of this was an obvious preliminary to the impending V-E Day. Even more so was the appearance of the specialist teams like military government (the town mayor of Salzburg, Austria, was in our column) and the War Crimes Commission. Also, corps headquarters was attracting a gaggle of new observers and liaison officers representing diverse interests from fine arts to fertilizer and a new celebration spirit was infecting everyone. Two daring engineer officers from Fifth Army in Italy turned up in our lines. They simply drove up in a jeep.

Oh, it was definitely almost V-E Day. But not with my G3.



Despite the last firm dispatch to "halt patrolling and ground all weapons," he sent me scurrying back to corps to flush out an answer to a vexing question: "We're drawing artillery and small-arms fire from Austria. How are we to react?"

This stumped the corps staff, who launched the question way up the line. In the small hours of the morning, I made my way back to the G3 and his staff and charmed them with my answer—from Gen. Dwight D. Eisenhower's staff no less: "The Austrians are to be considered 'friendly belligerents.' "

The G3 was livid. It was face-the-map time for me again. "See those red marks? Those 'friendly belligerents' crossed the river and we're beating them back. Does 'friendly belligerent' mean they can shoot and we can't? If you mention V-E Day to me again. . . ." For me it was becoming a race to survive cease-fire *planning*.

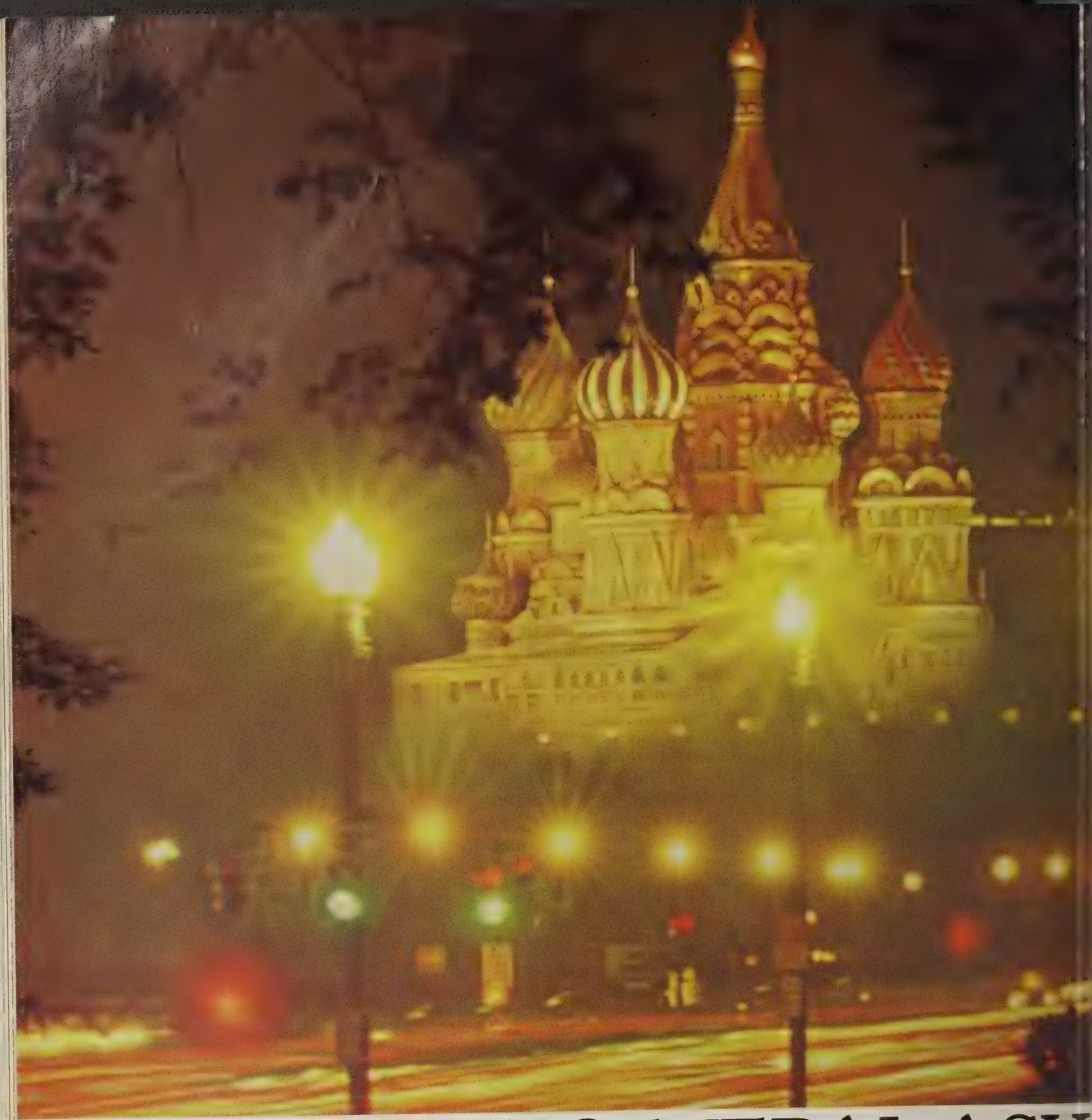
The next "pre-V-E Day" was calmer at headquarters. The Austrian border quieted down; our observers reported many Austrian flags flying (in contrast to the profusion of white ones on the Bavarian side). Our patrolling slowed down in favor of bathing and washing clothes in the soft alpine spring. Everywhere, attention was on the radio news of the capture of Reichsmarshal Hermann Göring and Nazi Party officials, and the interception of famed generals like Gerd von Runstedt, Albert Kesselring and Heinz Guderian.

There were confirmed reports of Adm. Karl Doenitz's progress toward the surrender schoolhouse in North Germany, which would finally produce V-E Day. Even the G3 appeared a bit relaxed, enough to let the headquarters commandant ask me and my driver to locate some decent wine and brandy in case the headquarters might celebrate something, someday.

Accompanied by another lieutenant, we rejected all the Bavarian stock encountered and slipped cautiously into Austria. We found that the Austrians were not belligerent at all! We were the first Americans they had seen for a long while, and they treated us with enthusiastic protocol, shall we say, along with delightful Austrian wines and brandies.

Moving glowingly from one town to the next, we started noticing signs reading *Nach Wien* (to Vienna) and were tempted. Why not? Two of us spoke German and our driver from Pennsylvania spoke Russian, but after nightfall we were ensconced in an admiring throng in the main hall of a picturesque town *gasthaus*, where time slipped by like mist.

After some murmuring and conferring a town official shoved his way through the young women surrounding our table and the crowd fell silent. Between his broken English and our fractured German, we understood he was begging us to help



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them with a desperate problem. A German unit was holed up on a nearby farm refusing to surrender, despite knowing it was V-E Day (*they* knew about it).

The town mayor and a councilman had been shot while trying to talk with them, even while carrying a white flag. Not only was this an *SS* unit of 43 heavily armed thugs led by a *Sturmbannführer* (major), the farm was also behind us. We had blazed right past it and, strangely, were not fired on. We were, it appeared, a bit too far forward.

The three of us held a conference in a dank corridor, aided by a bottle of brandy. We determined that we could not make a break past the farmhouse a second time. So, leaving the other lieutenant behind (just in case—he was also getting a bit drunk), my driver and I headed slowly toward the farm. A daring local game warden was sitting on the hood holding a white flag (I refused to have it attached to the jeep).

We inched warily over a wooden canal bridge and took shelter in a small railroad station where the stationmaster and his wife promptly produced bottles of wine. I deferred and had him hook me up by telephone with the farm. In my best command-voice German, I identified myself as a reconnaissance task force leader and demanded to see their senior officer regarding surrender. I gave them ten minutes, reminding them that their position had already been reported to our artillery fire control, and hung up. I went outside to dry my palms, stop shaking and take a belt of brandy.

In a while, a bicyclist coasted down the hill from the farmhouse and an officer stepped briskly into the station. He was an *SS* major, who greeted me as "leftenant" in a perfect Oxford accent. I recovered quickly (I thought) and started ranting at him, more for my morale than for any other purpose.

"What's the idea? Are you trying to get killed foolishly? You know the war's over (I was now doubtful, however)—you're through. Why are you terrorizing the town, shooting officials? Why? Why?"

There was a long pause. He looked scornfully at the stationmaster, his wife and the game warden, who were eyeing him nervously, and turned back to me. His hand went to his pistol holster as he snapped, "Because I'm a soldier! I can't surrender to civilians," he sneered. "Would *you*? I'm glad you've come." And with a startling crack of his heels, he snapped out his Luger and shoved it at me butt first. I grabbed it eagerly but I wish now I had been more casual.

We exchanged salutes, shook hands and out came the cool wine. Now visibly more relaxed, we discussed the details of surrender. I demanded all his weapons be delivered to me at the station at once. He went to the telephone and barked orders. I instructed him to get his men on the road to Salzburg at sunrise until he met a U.S. unit. ("How far?" "None of your business.") With my gathering courage, I asked him to call on the acting *bürgermeister* of the town and apologize for his uncivilized action. This he refused. ("Soldiers don't apologize.")

An obscenely long, open staff car soon clattered down the hill and parked at the station. It was loaded with a variety of menacing weapons and explosives. After a respectful inspection, I ordered the driver to aim the car at the bridge rail and jump out before it hit. The major straightened, looked from me to the driver several times, then shrugged and barked the order to go. The driver grinned and gunned the engine. He jumped clear as the car hit the rail and went over in a gigantic splash.

I reminded the German that his position was well plotted by my units, then offered my casual farewell. As I started for my jeep he said, with a wide, toothy grin, "Leftenant—you have no radios in your jeep."

"Oh, well," I groped, "the radios are in the other jeep in town."

"There is no other jeep in the town, but thanks for coming out anyway."

We tore back to the *gasthaus*, where the game warden made a full report. At some stage in the ensuing celebratic the room slowly quieted again as so town council members approached o center table.

"Highly respected sirs," began the spok man, "from what we have put togeth the *SS* did not bring down all their wea ons. There are many more. They w take them from the canal. We are still danger." We assured them that the u had been "defanged," but few bought We were forced to play our dramatic a

"Look," we explained with sagging b vado, "we're recon men, ahead of U.S. forces. Our artillery knows wh we are and where the *SS* division is. we don't get back, they'll open fire a likely hit the town, too."

"Then you must stay!"

"Lovely idea, but we have other inf mation to get back."

"But you won't make it."

"Why not?"

"The six bridges west of here—they all mined and wired by the *SS*."

Another weary conference in a s corridor (it was about 3:00 A.M.) p duced a plan.

"We're going to check out those mi bridges," we announced as we caree off so fast we never even saw the fa house; the same goes for most of bridges. Our bleary-eyed logic was s ple: the *SS* wanted to surrender to U forces, not Russian. To do so, they ne ed the bridges. They would not b them. They did not.

During our high-speed dash over Austrian plain and around Salzburg, saw no sign of a U.S. presence. We cro back into Bavaria and returned to he quarters. The operations room was serted and was a shambles from the bris of what must have been a very slo party. And—horrors—across the G3's cred situation map were huge letters r ing "V-E Day!"

It could not be more official.

As I was wearily kicking a bedro place next to the situation map, my caught on a vivid red square drawn in Austria. I pressed my face to the to be sure. The square was drawn arc the charming little town we had just c from. I roused the operations serge "What the hell is this all about, sarg asked jabbing at the red square whic so bore an artillery fire-mission num

The sergeant worked at focusing f while then said, "Oh, that. Some Au an reported there was a big *SS* unit t holding a whole town hostage. We getting permission to fire on it when sprung V-E Day. What a party! W were *you*, lieutenant?"

BILL HERMAN, retired information cer, is now a free-lance writer livi St. Augustine, Fla.

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The Editors

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DEFENSE COMMUNICATIONS

The Light Infantry: Indispensable Element Of a Balanced Force



Unequalled in its preferred terrain, this versatile addition to the modern U.S. Army has the ability to fight effectively in a wide variety of situations. But to achieve their maximum potential against an enemy equipped with modern armor, our light forces badly need an adequate shoulder-fired antitank capability.

By Gen. William E. DePuy
U.S. Army, retired

A 50-year trend toward larger and heavier divisions was stopped by Gen. Edward C. Meyer and reversed by Gen. John A. Wickham Jr. when these Army chiefs of staff, one former and the other incumbent, gave a new dimension to Army capabilities by making room for the light infantry division.

Reactions to this turnabout have been mixed. There is satisfaction with the increased strategic mobility of the new light infantry divisions, but concern about their utility once delivered.

Others wonder how this new departure measures up against continued Soviet emphasis on heavy armor and how it fits the Army's new tactical doctrine and strong focus on maneuver.

It is my premise that light infantry is required and that the chief of staff is c rect in his move to meet that requ ment now.

Few have difficulty in sensing the uti of light infantry in, say, Central Ame or even Korea. When applied to Eur or Southwest Asia, however, there conceptual difficulty and considera confusion.

History and recent experience tell that armies must be able to fight in kinds of terrain against all manner of posing forces. The heavy armored mechanized divisions which have co to dominate the U.S. Army force str ture are designed to confront similar mations of the Warsaw Pact on the c tral NATO front.

More specifically, they are designe



ecute highly mobile operations in the naining open areas of West Germany. ese heavy divisions are less suitable, wever, for operations in forested areas d increasingly urbanized terrain. They , of course, unsuitable for operations mountains.

ight infantry, on the other hand, is hly suitable for operations in these ds of closed or obstructive terrain and such an environment is more mobile, vivable and effective than armored or chanized forces.

Because this assertion regarding the rel-ve effectiveness of light infantry will go down easily in some quarters, I ll dwell on the matter at some length. The light infantry: What is it? What it do? How does it differ from the Army's other maneuver arms?

At the outset, it must be made clear that we are not referring to the 9th Infantry Division (Motorized), another subject altogether which needs separate and careful treatment in its own right. In what follows, we speak of pure infantry —infantry on foot, carrying its weapons on its backs.

Mechanized infantry shares these characteristics when it dismounts, airborne infantry when it has slipped out of its parachute harness, and air assault infantry after the delivering helicopters have departed.

But we plan to leave our light infantry on foot—in the forests, the buildings or the mountains—to fight it out. This kind of infantry is specifically designed for such operations. It does not leave the roads in the valley clogged with the vehicles it has left behind as it climbs into the hills (as in Korea). It does not depend for its main firepower on the guns of armored fighting vehicles which it, in turn, would be obliged to protect. It may be moved from time to time by helicopters into mountain and otherwise inaccessible positions, but it does not operate a vast armada of flying machines. It is, in short, very much like World War II airborne divisions once they found themselves on the ground.

Light infantry consists of soldiers on foot, carrying rifles, grenade launchers, machine guns, light antiarmor weapons, mortars, hand grenades, possibly mines, and always radios. In their pockets, pouches

and rucksacks, they carry ammunition and life support equipment such as entrenching tools, food, water, ponchos, first aid kits and sleeping rolls.

These trained and hardened soldiers, individually and in small teams, move and dwell in the very small compartments of the micro-terrain. They walk, run, crawl, dig and employ their weapons in the deep nap of the earth. These terrain compartments are defined and limited by the range of direct vision (intervisibility). They can be relatively larger, as in clearings and along firebreaks, from mountain ridges or high buildings. They can be very small, as in the rooms, basements and attics of houses, in the spaces between trees and bushes and in the confines of rocky declivities in the sides of mountains.

In this kind of terrain, control is necessarily decentralized. The fighting takes place at team, squad and platoon level, most of it beyond the view and some of it beyond the knowledge of battalion and even company commanders. In no other form of combat does so much depend upon small unit leaders and aggressive and innovative responses to transient opportunities within the broadest interpretation of the mission at hand.

In his book *On to Berlin*, Lt. Gen. James M. Gavin, U.S. Army, retired, affords a classic view of light infantry operating magnificently in its own environment. Lt. Col. Ben Vandervoort's battalion of the 505th Parachute Infantry was fighting toward the key bridge over the lower Rhine in Nijmegen, The Netherlands, in cooperation with the tanks of the British Grenadier Guards.

> The tanks of the Grenadier Guards were very vulnerable in the city streets . . . Vandervoort's troops had to fight their way from building to building. . . . It was a new experience for the troopers, but they soon discovered that the best technique was to fight from rooftop to rooftop. . . . Later the veteran troopers told me . . . what they wanted to do . . . was to get as close . . . as they could . . . to fire down into the gun positions of the 88s and the foxholes of the Germans. . . . As a British officer of the Grenadier Guards later described it, "A jolly sight to see those paratroopers, hopping from rooftop to rooftop.". . . In the final all-out assault, they overran all the German positions . . . of the 500 Germans . . . south of the river . . . only 60 survived.

"In the set of new light divisions, the Army has a force which is strategically mobile and tactically versatile in its preferred terrain. The challenge to Army commanders will be to integrate this new capability into successful 'operations.' "

Light infantry can maneuver offensively or defensively through kinds of terrain where no vehicle can or dares to go. It can disappear into such terrain and become invisible to the enemy in front and to sensors above. The grazing angles of the airborne radars do not reach into the nap of the earth and light infantrymen are poor reflectors.

Because the infantryman is almost completely vulnerable to enemy weapons, he has learned to survive by the continuous use of cover from fire and concealment from view. It is these passive measures upon which the survivability of the light infantry chiefly depends. Consider the skillful application of these techniques by our erstwhile opponents, the Vietcong and the North Vietnamese army.

Much of the utility of light infantry comes from the fact that it is a widely distributed, very high resolution surveillance, target acquisition and engagement system. By placing soldiers in every te rain compartment across its front, hov ever small, the enemy cannot move wit out detection and engagement. It is n just the light weapons of the light infa try which are brought to bear; the infa try is the agent of all the firepower th can be summoned from the rear: artiller mortars, rockets, missiles, attack helico ters and tactical air forces.

Thus, a large fraction of applied fir power need not be carried into the fo ward edge of the battle area on the bac of light infantry, but, nonetheless, the heavy systems must be present in t force and available in support of light i fantry whenever they go into action.

At the end of World War II it occurr to me that, as an infantry battalion co mander, one of my greatest contributio to the success of the venture was to mo artillery observers to the next high poi of ground from which they could dor nate by heavy firepower all the terra under their view.

And so it will always be that the lig infantry, in addition to its own intrin fighting value, is also a primary mea by which massive modern fire supp can be brought to bear with precisi and decisive effect on enemy forces countered or flushed during aggress light infantry operations.

We must not be carried too far by following analogy but the light infan soldier is, beyond doubt, the most ver tile, advanced and effective combat "s tem" on the battlefield and will ne



During Operation 'Market Garden' in The Netherlands, September 1944, the 82nd Airborne Division's 505th Parachute Infantry was able to fight effectively in Nijmegen, where armor was stymied; in the background, the main Allied objective, the bridge over the lower Rhine.

GEN. WILLIAM E. DePUY, U.S. Army, retired, is the former commander of U.S. Army Training and Doctrine Command. Commissioned from ROTC in 1941, he served in Europe in World War II and commanded the 1st Infantry Division in Vietnam. He is a former deputy commander of the old Continental Army Command, has served in the Office of the Joint Chiefs of Staff, as assistant vice chief of the Army General Staff, with the CIA and as a military attaché.



A 2.36-inch bazooka team of the 78th Infantry Division's 309th Field Artillery Battalion set up to protect an engineer working party near Aachen, Germany, January 1945; by this time, the weapon's limitations were well known.

be duplicated in mechanical or electrical form. If we ever came close, we could not afford such a mechanism.

Consider:

- In one package, the light infantry soldier provides an optical and aural sensor system (eyes and ears) tied into a central processor (the brain) with an incredible range of operating programs and almost infinite recoverable memory.
- The system can be rapidly programmed (through training) and loaded through a voice-recognition system. It is, thereafter, adaptive and self-reprogrammable.
- It can accept and apply mission-type instructions to infinitely variable terrain, conditions of visibility, size and composition of enemy force and enemy movements and actions.
- It can assess and select covered and concealed routes of advance into the enemy rear and onto his flanks.
- All this is mounted on a multi-flex chassis capable of negotiating every kind of terrain, including water obstacles, by self-propulsion.
- Super robotic arms, hands and fingers with infinite degrees of freedom couple the control processor to weapons and communication devices.

- This remarkable fighting system includes automatic and continuous position location, plus situation analysis and reporting, with a large, flexible (even entertaining) vocabulary.



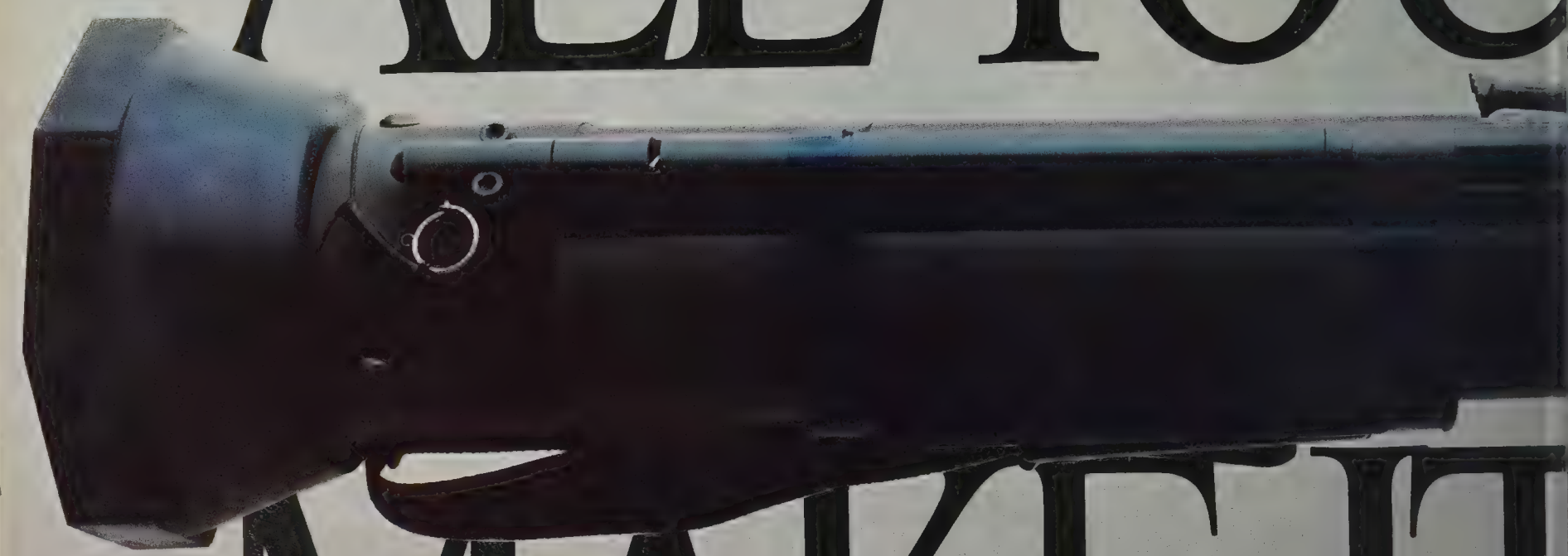
- The "system" performs target detection, identification, acquisition, munition and weapon selection, engagement, damage assessment and reengagement as indicated by target condition.

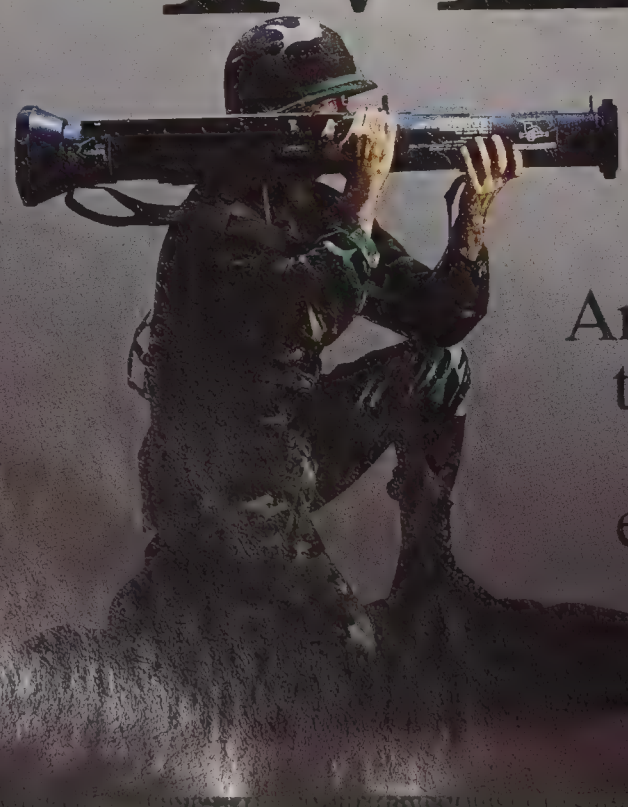
The light infantry soldier offers what the gurus of artificial intelligence only dream about, wistfully, and are destined never to even remotely approach.

Light infantry is a unique, indispensable element of a balanced fighting force. In its preferred environment, it is the maneuver force of choice. There will always be a strong temptation, however, to "fix" the light infantry by beefing it up. Each of its virtues in light infantry terrain will be regarded as a deficiency in "universal" terrain. The organizational mechanics will inevitably try to give it mobility, survivability and more lethality by loading it up with heavy weapons, vehicles and even armor. The danger then becomes one of creating an impotent hybrid, too encumbered to be mobile in the forest and too vulnerable to survive in the open.

This is not to say that the light infantry can do it all alone. It should not be deployed without additional fire support which need not accompany it into the

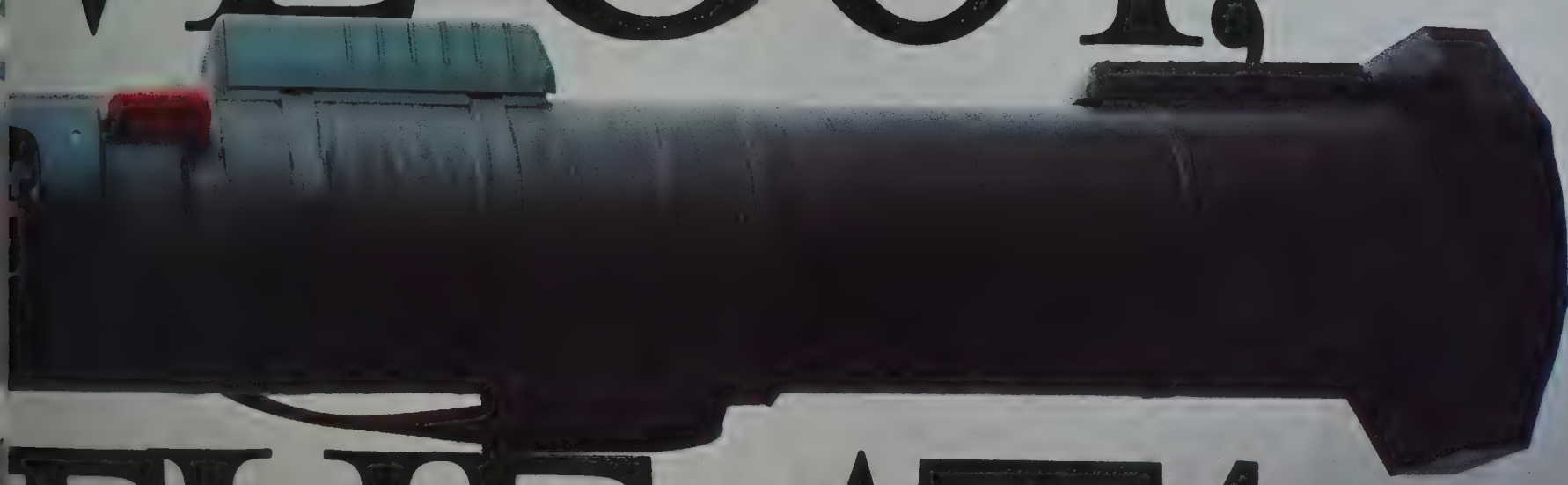
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The 3.5-inch bazooka was not available in the Far East when the Korean War began, but supplies were soon airlifted from stateside depots. As the legend on the turret testifies, Maj. Gen. William F. Dean, commander of the 24th Infantry Division, used one of the new weapons to knock out this North Korean T–34/85 near Taejon, 20 July, 1950.

forests or mountains. But it must be able to support light infantry wherever it may be and be able to exploit its target acquiring and target forming characteristics.

There is no controversy and little doubt that light infantry will be required in many of the contingency operations which may arise, particularly in the less-developed regions of the world—areas characterized by tropical jungles, forested mountains and swampy deltas.

Mountains remind me of a recent news item to the effect that the 10th Mountain Division (Light Infantry) was considering recourse to mules to pack its heavier loads. That is one way to do it, but a better one by far is by helicopter.

In fact, the 101st Airborne Division (Air Assault), as it is now organized, is a nearly perfect mountain division. It could deploy into, say, the Zagros Mountains along the Persian Gulf (should that be necessary) by lifting light infantry with heavy antitank guided missiles (ATGMs) to the high ridges overlooking the few routes which snake their ways through the valleys below. It would be virtually impossible for a mechanized army to dislodge such a force.

What about Europe? Gen. Frederick J. Kroesen, when serving first as VII Corps commander and later as U.S. Army, Europe, and NATO's Central Army Group commander, wanted more infantry; he saw needs for it almost everywhere. German Gen. Uhle Wetter made a strong case for more infantry in the forested and urban terrain of West Germany. Recently, the U.S. Army has canvassed its current NATO commanders on the subject and it is reported that they, too, are interested in light infantry divisions, or parts of divisions, in the U.S. force in Europe.

From an operational standpoint, there is a marvelous opportunity to use up to two light divisions smack in the center of the U.S. sector. Between V and VII Corps lies an awkward piece of terrain which is in the form of a giant wedge or triangle.

The apex is on the zonal boundary beyond Wildflecken. To the south and west stretch the high hills, deep ravines and thick forests of the Hohe Rhön and the Spessart. The base of the triangle runs along the Main river from Würzburg to Hanau. This nearly equilateral wedge of terrain is about 75 kilometers on a side and it acts as a huge gusset in the fabric of the U.S. defensive sector which extends north in V Corps and east in VII Corps.

If they could, both corps would love to wish this terrain away; it is an embarrassment to a highly mechanized force. Neither corps wishes, or can afford, to invest its very mobile armored or me anized divisions in such restricted t rain. V Corps will be drawn northw into the battle of the Fulda Gap and VII Corps eastward into the Meining Würzburg corridor.

So why not deliver a light infan corps to infest and operate in and fr this terrain? It would be nearly impo ble for Soviet mechanized forces to lodge it with any reasonable diversion effort.

Under these circumstances, the So commander would most likely ignore terrain—stick to the high-speed routes either flank, do battle with our heavy visions in the open and do his best press on to his assigned objectives.

But can NATO take the same vi On the Hanau-Würzburg line, the b of the triangle represents nearly 30 cent of the U.S. battle line. Furtherm this terrain, although difficult, is by means impassable, even for armor. call that in World War II a task forc 4th Armored Division made a fast tra of this area from Aschaffenburg to H melburg in an ill-fated effort to free prisoners. They did not make it back cause they were trapped in unfrie terrain. That same terrain today is optimum environment for light infa operations.

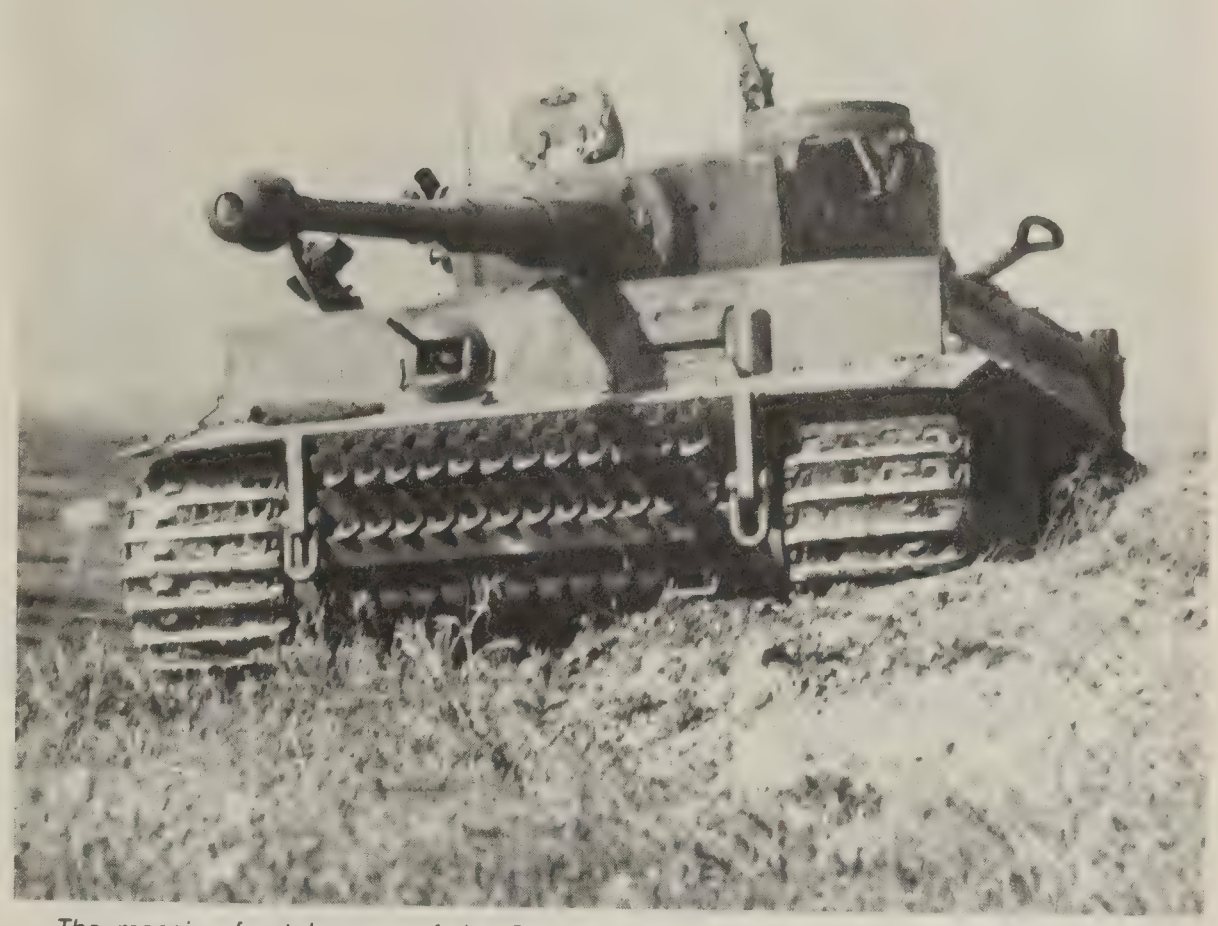
Within the protected confines of

enormous hedgehog, positioned on the flanks of two main invasion routes, the defending army could locate long-range rocket and missile firing positions, surveillance and target acquisition bases and special operations raiding forces. Offensive operation by light infantry could be mounted against the flanks and rear of Warsaw Pact forces moving on adjacent routes.

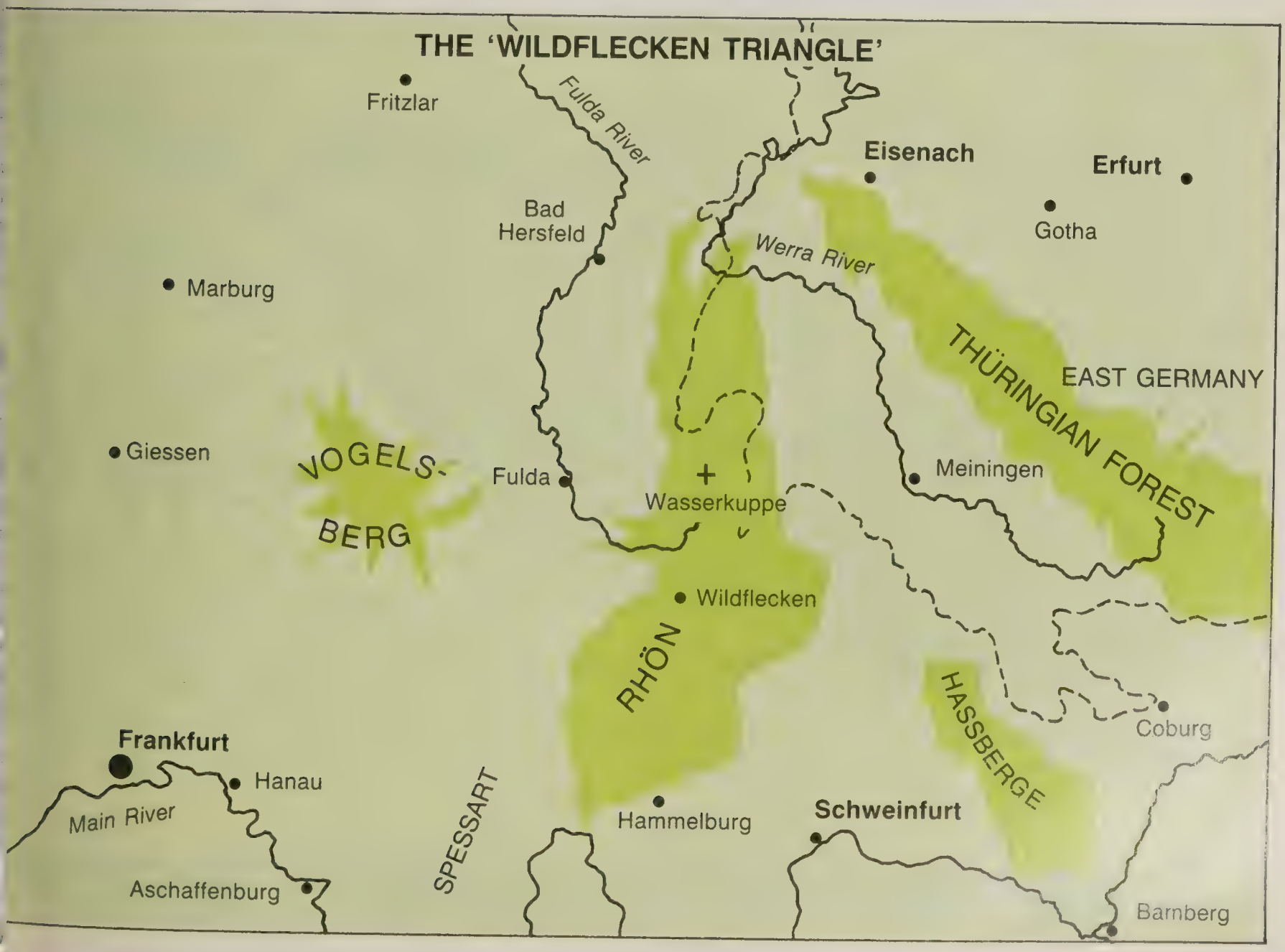
The area affords a protected penetration route for attack aircraft and helicopters working on the rear echelons of the opposing force. It provides a stable anchor for the mobile operations of our armored forces on either flank. In short, light infantry could convert the Wildflecken Triangle from a liability to an asset.

The huge urban coagulations, for example, at Munich, Stuttgart, Frankfurt and in the Ruhr also could harbor light infantry. But surely these politically sensitive requirements would be met by the reserves and territorial forces of our NATO allies.

In Europe or in Southwest Asia against modern armor, it is always possible for



The massive frontal armor of the German PzKw VI Tiger I tank consistently defeated the 2.36-inch bazooka. This one was disabled in Tunisia during World War II by British troops using a captured German antitank gun.



1947

America's first light, bleed gas turbine engine powers up at a Garrett laboratory in Torrance, California.

By 1949, a derivative of that Garrett light turbine provides auxiliary power aboard the B-36 bomber. Radial piston engines continue to be the mainstay of aircraft power for several years.

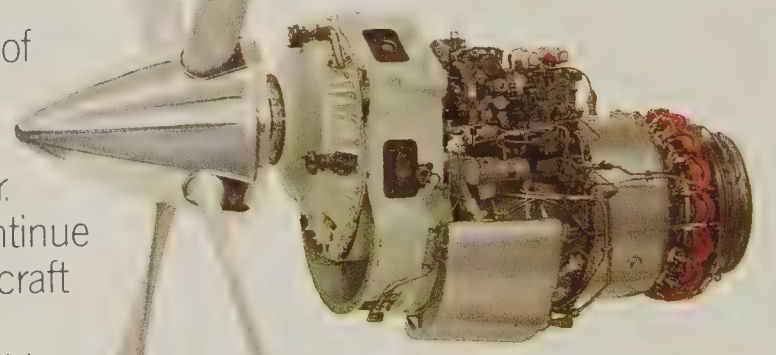
The era of the light turbine engine has begun.

1958

Allison begins development of the 250 SHP light turbine engine for the Army. Less than a year later, in April of 1959, the Allison Model 250 turboshaft runs for the first time. Its military designation is the T63.

By June, the Navy selects the Allison 250 to power the new Bell HUL-2.

Within two years, the Army contracts with Bell, Hiller and Hughes to build light helicopters.



Garrett's TPE331. The OV10 alone accounts for 4 million of its hours

Each of these new helicopters will be powered by the Allison Model 250 engine.

1963

The Navy chooses Garrett's TPE331 turboprop as the T76 powerplant for the new OV10 Close Support Aircraft.

1965

An Allison 250-C13 powers yet another light helicopter, Bell's new Jet Ranger. Garrett's turboprop enters commercial service. Over 10,000 will be produced, accumulating more than 30 million hours.

The Army sets 22 unofficial world records in 1966. Each set by the Allison-powered OH-6A. By 1967 Garrett's TPE331 enters Navy, Air Force, and Marine service.

1970

Two growth versions of Allison's Model 250 are certified, raising its power level to 420 SHP. The C20 and C20B versions will prove to be the most popular light helicopter engines ever built. Garrett's T76 hits 840 SHP.

1972

Garrett introduces the TFE731 turbofan. It will become the most successful turbofan in aviation history. Nearly 5000 are produced providing 8.3 million operating hours on 23 aircraft in 40 countries.



Perhaps the most popular helicopter engine ever built. Over 5,000 Allison light turbines in the Army inventory alone

ONE LHX TEAM HAS A HISTOR

1975

A turboshaft derivative of Garrett's 331 wins certification to power the Sikorsky S55T. Enhanced OV10 mission requirements breed a TPE331 with



Allison's Model 250, with over 37 million hours. It powers 15 world records in 1985 alone.

nearly 50% higher SHP in the same frame size. The OV10 application alone will later accumulate over 4 million hours.



Then in 1976, an around-the-world record. For the first time, a general aviation aircraft circumnavigates the globe in less than 60 hours.

The aircraft is powered by Garrett TFE731 turbofans.

1977

The Army awards Allison an Advanced Technology Demonstrator Engine (ATDE) program.

Allison soon will meet or exceed all Army goals. And will reduce SFCs by 25% at increased power to weight ratio.

In 1978, Allison certifies two new Model 250 growth versions at 500 and 650 SHP. Bell, Sikorsky and MBB select the 250 to power new military and commercial helicopters.

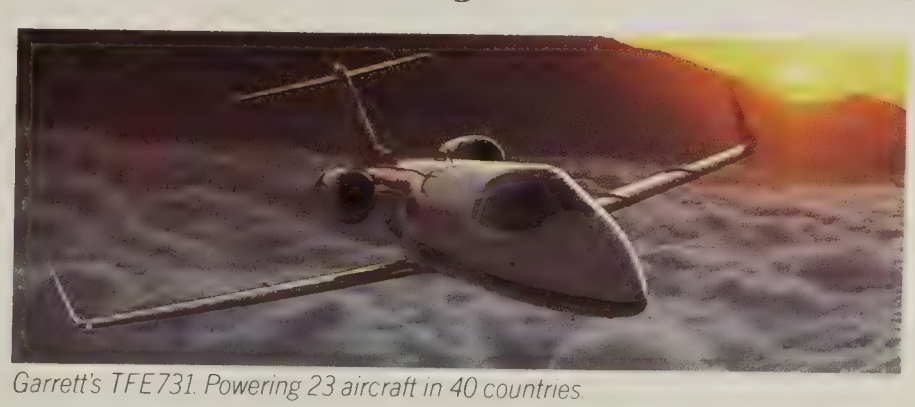
1981

A Sikorsky S76, powered by a Model 250, sets 12 helicopter altitude and speed records.

During the same year a Model 250 powers the Army to the World Helicopter Championship.

1982

Ross Perot Jr. and Jay Coburn first circle the globe in a helicopter. Dick Smith makes first solo transatlantic helicopter flight. Allison Model 250 engines



Garrett's TFE731. Powering 23 aircraft in 40 countries.

power both ships.

U.S.A.F. selects Garrett F109 power for the Next Generation T-46 Trainer. During the same period, Allison further refines the ATDE. These designs will be the basis for a highly advanced turboshaft derivative.

1984

Allison's light turbine production passes 20,000 units, with 5000 in U.S. Army inventory alone. They announce a 735 SHP version of the Model 250 with improved power to weight ratio.

Garrett and Allison enter a landmark R & D program to design an LHX turboshaft for the U.S. Army. Technology from Allison's ATDE and Garrett's F109 turboshaft derivative, the TSE109, blend in the ATE109 turboshaft.



10 December 1984. An ATE109 prototype exceeds 1260 SHP within SFC requirements

1985

Garrett delivers F109s to U.S.A.F. They are delivered on cost and ahead of schedule.

Allison flies an LHX adaptive fuel control.

On March 7th, a major milestone. A prototype LHX engine powers its UH-1B test bed aloft. It is the first LHX engine ever to fly.

After 280 million hours of combined light turbine engine experience, Garrett and Allison produce a superior LHX engine candidate.



1630 Hours. 7 March 1985

Allison and Garrett. America's LHX propulsion team.

F LIGHT TURBINE EXPERIENCE.

light infantry to construct strong points or other fortified positions behind mines and within wire, given time and circumstances. Such was the typical employment of infantry on the North African desert. When, as with the Germans in June 1942 at Bir Hacheim (the southern anchor of the British Gazala line), the armor felt it necessary to attack such defenses frontally, it paid a heavy price. But too often the infantry was left behind to be rounded up by the mobile force which achieved an operational victory. Remember, too, the more recent fate of the Bar-Lev line along the Suez Canal in October 1973. It is brave but sad to use light infantry in this way.

Thus far, I have tried to convince the reader that light infantry is particularly well suited for employment in closed and obstructive terrain, and that it can maneuver aggressively in there when heavier forces are greatly inhibited or totally blocked.

"If it is true that the laws of physics and the state of current technology preclude the development of a shoulder-fired weapon that can defeat enemy armor head-on as it approaches the infantry position, then we must find a weapon which at least will defeat enemy armor should it penetrate into light infantry positions."

The use of light infantry in World War II by the Germans as a screening and shaping force leads some to consider such forces as primarily defensive. In the open steppes or desert, that opinion tends to be borne out but it is clearly not true in light infantry terrain. Such terrain, in fact, affords a more congenial environment for the attack than for the defense. This is because the compartmentation of the terrain permits the attacker (light in fantry) to maneuver out of view and t concentrate undetected. The defense, c the other hand, is obliged to occupy a of the terrain compartments—only ligh infantry can do so—in order to mainta even surveillance across the front. Ther fore, the defense can never be very stron at any one point and must rely on th massing of heavy firepower delivere from the distant rear as a means of rap counterconcentration. In these cases, th infantry line is a gigantic sensor arra for which no viable mechanical subs tute has ever been found.



Light infantry has little use for weapons it cannot carry into battle: a 7th Infantry Division (Light) soldier hunches beneath the weight of his equipment during Exercise Team Spirit '85 in South Korea.

In the attack, light infantry is ev more effective on its own accou because it can move by stealth, night, or through covered and conceal routes within the micro-terrain into t enemy positions or into his rear area Elite light infantry operating in this ma ner is a terrifying weapon.

An attractive option often open a often exploited by seasoned light infa try in World War II was to find its w by concealed routes into the enemy's re usually at night. By occupying a contr ling piece of terrain, the infantry th called on heavy fire support to assist destroying the enemy force sent to d lodge it. It is unlikely that this formu has lost its effectiveness through age.

In the set of new light divisions, t Army has a force which is strategica mobile and tactically versatile in its p ferred terrain. The challenge to Ar commanders will be to integrate this n capability into successful "operation The operational art which is now be revived and strengthened in an Ar which has been tactically preoccup



The Army recognizes the limitations of the M47 Dragon medium-range antitank missile system, but has yet to develop a suitable replacement.

since Korea is the art of conducting successful campaigns using high performance tactical units, within a strategy for winning wars.

In certain contingencies, light infantry might comprise the chief component of the force. In Southwest Asia, light infantry would more likely be a key element; in NATO, it would be a useful addition.

In all these cases, the rapid strategic deployment of light divisions could be important as a token of U.S. resolve and intentions. Upon arrival, however, their combat performance is the paramount issue. In this discussion, there is an implicit assumption that light infantry can destroy enemy armor with the weapons in hand—if not at long range, then surely in close combat. Unfortunately, this pre-

supposition is under challenge.

In the last 15 or so years, armor technology has thrown off its dependence on rolled homogeneous steel plate and has exploded to new and higher levels of effectiveness. Spaced, laminated and even more exotic concepts for armor protection have reached a point where many of the smaller antiarmor weapons have been rendered largely ineffective, at least against the frontal armor and turrets of the most modern tanks. This fact has profound implications for light infantry which is so heavily dependent on those same smaller weapons.

The largest tank guns and the heaviest ATGMs can penetrate the most advanced armor in the frontal aspect. But these weapons are too large and heavy to accompany light infantry into its favored terrain so, generally, these larger weapons will be confined to the force which rides to work.

Correspondingly, they will be found with infantry which more often operates in areas of good visibility. Long-range fields of fire favor ATGMs because of their ability to engage tanks beyond the effective range of the tank's guns. Except in the mountains, opportunities for long-range shots are rarely found in light infantry terrain.



The Swedish AT-4 shoulder-fired recoilless antitank gun is being tested by the Army as a potential replacement for the M72-series rocket launcher.



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Building on Army Investments



The Viper rocket launcher was to be the Army's new LAW (light antitank weapon), but the desired performance could not be achieved within the severe weight limitations and development was halted in 1983.

e Dragon was developed in an ef-
o bring the effectiveness of the AT-
o the infantry which walks to bat-
imps, lands from helicopters or dis-
its from vehicles. Given its weight
bulk, its distinctive signature, long
of flight, slow rate of fire and rela-
high profile—coupled with a range
within the effectiveness envelope of
apid firing tank gun—the Dragon
nds the full measure of devotion
its gunners. Now the newest armor
s Dragon into the marginal category
ms of frontal penetration.

forts to replace Dragon have been
unsuccessful. "Rattler" aborted af-
er industry proposals had been re-
l. "Awesome," a new concept (from
S—advanced antitank weapon sys-
is just now moving into the front
f the development process. It is
that this effort will move rapidly
a pressing need.

the low end of the spectrum, the
in which the light antiarmor weap-
AW) operates, high technology ar-
as gained at least a temporary up-
and.

we forget what this means to light
ry, Gen. Gavin's views were clear after his experiences in Sicily as the commander of the 505th Parachute Infantry Regiment. In his book, *On to Berlin*, he notes:

> Ironically, after many lives were lost, in mid-August 1943 we received a War Department intelligence bulletin telling us that the bazooka [2.36 inch] would not penetrate the frontplate of the Tiger tank —as though we didn't know it already. More sadly, we still had not obtained a larger bazooka by the time Gen. [Douglas] MacArthur sent the first troops to Korea seven years later to meet the Soviet T-34 tanks in the summer of 1950.

T. R. Fehrenbach in his book, *This Kind of War*, tells us what happened seven years later:

> Task Force Smith was dug in along the main highway between Suwon and Osan. . . . At 700 yards, both recoilless rifles (75-mm) slammed at the tanks. Round after round burst against the T-34 turrets with no apparent effect. . . . Lt. Ollie Connor, watching, grabbed a bazooka and ran down to the ditch along side the road. Steadying the 2.36-inch rocket launcher on the nearest tank, only 15 yards away, Connor let fly. The small shaped charge burned out against the thick Russian armor without penetrating. Connor fired again, this time at the rear of the tank where the armor protection was supposed to be thinnest. He fired 22 rockets, none of which did any damage. . . . The tanks . . . continued down the road.

Ten years ago, the Army undertook to replace the current LAW with a new and better weapon called the Viper. The Viper program has been discontinued. In trying to meet the range, time of flight and penetration specifications, within the weight limits for light infantry use and at a cost which would allow proliferation of the new weapon throughout the force, the program came apart.

Now the Army is completing an evaluation of other alternatives, including a number of foreign models. The Swedish AT-4 is regarded favorably for troops who have a vehicle to help carry it around. But the discouraging fact is that presently there is no hand-carried/shoulder-fired individual antiarmor weapon anywhere in the world which can defeat modern armor head-on at a weight and size appropriate for light infantry operations.

Such is the low state to which the Army has been brought by the ascendancy of armor technology. Such is the chief problem which faces the light infantry.

What is the solution?

First, it should be very clear just how these valuable troops should be employed.

In the best of all worlds, light infantry would be used:

- Against comparably equipped light forces in any kind of terrain.
- Against armored forces, in general, only in light infantry terrain.
- Against the most modern enemy armor only in that part of the light infantry terrain which is not physically negotiable by that armor.

But the reader will be uncomfortable with such rules and assumptions; the world is a disorderly place which does not always submit to precise formulae. In emergencies, decisions to send U.S. forces into combat are not made by authorities who are aware of such technical problems; President Harry S Truman was not thinking about 2.36-inch rocket launchers when he ordered U.S. troops into Korea.

It is easy to imagine a scenario in which the United States goes to war in some distant part of the world in which the exigencies of the situation cause light infantry to be exposed to conditions which are unfavorable for such troops.

There are ample precedents for such expectations; however, we are aware of the fact that there have been times when the troops managed to succeed against all odds and all tactical logic. This is at once the glory of the fighting troops and the shame of the weapons development community. The men who equipped the U.S. Army with the 2.36-inch bazooka were not with Gen. Gavin in Sicily. He bailed them out with the only currency he had, the lives of his brave troops.

When this same 82nd Airborne Division was thrown into the Battle of the Bulge on the critical northern flank of the German penetration in December 1944, the light infantry of the 504th Parachute Infantry Regiment under the legendary Col. Reuben Tucker again bailed out the high command. As Gen. Gavin described it in *On to Berlin*:

> Shortly after daylight on December 20, I met Col. Reuben Tucker. . . . He told me . . . that approximately 125 [German] vehicles, including 30 tanks, had moved . . in the direction of Cheneux. . . . He was anxious to go after them without delay. Any ordinary infantry regiment would want at least a battalion of tanks in support before it attacked, but Tucker's idea was to attack the Germans and take their armor away from them. Besides, he had been carrying with him about a truckload of *panzerfausts* he had captured from the Germans in Holland, and they were to prove to be the paratroops' best antitank weapon. . . .
>
> So with his German *panzerfausts* and his superb infantry, Tucker moved at once to attack the Panzer forces in Cheneux. . . . Heavy fighting took place . . . the German firepower was impressive. They were using a great many 20-mm flak weapons.
>
> Col. Tucker had deployed the 1st Battalion of the 504th . . . and as darkness descended . . . Companies B and C were under tremendous fire from the village. . . . Tucker ordered . . . a night attack. . . . His 3rd Battalion . . . made a wide flanking movement . . . cut off Germans in the town and completely destroyed their command. . . . Tucker lost 225 dead and wounded. . . . Tucker captured 14 flak wagons and a battery of 105 howitzers as well as many vehicles. . . . The next day they pointed out they were now the 504th Parachute Armored Regiment.

It is just this kind of wild and inspired action which causes commanders to cept without complaint almost any sion which is served up in the hea battle. But weapons development sions are not made in that environ nor are the tactics those weapons gest appropriately left to chance. W obliged to think through this pro now and move with speed to resol otherwise, we will be faced, inevit with a rerun of Task Force Smith.

If it is true that the laws of physic the state of current technology pre the development of a shoulder-fired on that can defeat enemy armor hea as it approaches the infantry posi then we must find a weapon whi least will defeat enemy armor shou penetrate into light infantry positi

Such a weapon and the troops tr to employ it could deny many of th ban and forested areas of West Ger and most of the villages and towns t opposing force. Up-to-date maps this to represent more than half of a



If the Army develops its own Dragon replacement, the weapon could look like this Hughes Aircraft Co. mock-up of an infrared-guided antitank missile launcher, part of an earlier technology demonstration program.



A platoon of the 7th Infantry Division's Co. B, 2nd Battalion, 32nd Infantry, crosses a river in rubber boats during a recent training exercise.

errain which lies before the armored and
nechanized forces of the Warsaw Pact.
'his combination of facts draws us to
ne conclusion that the employment con-
ept needs to be adjusted and the perfor-
nance specifications thus relaxed.

An enemy tank which makes the mis-
ake of penetrating terrain infested with
ght infantry can be engaged from all as-
ects at very short ranges. That should
nake the technical problem easier. No
rge weight need be allocated to a large
ocket motor to achieve long range and
gh velocity.

Thus, the warhead could be larger and
e rocket could be smaller, as in the
'orld War II *panzerfaust* or even the
oviet RPG. If that avenue does not lead
success, then other technical solutions
ust be explored quickly.

But, above all, the weapon must be
early effective. It takes intrepid soldiers
employ such weapons, and intrepid
ldiers will be hard to find if their au-
city is seen to be most often rewarded
failure. A few examples like that of
Ollie Connor in Korea will dry up
e pool of intrepidity overnight.

Furthermore, this weapon must be ma-

"Light infantry is a unique, indispensable element of a balanced fighting force. In its preferred environment, it is the maneuver force of choice."

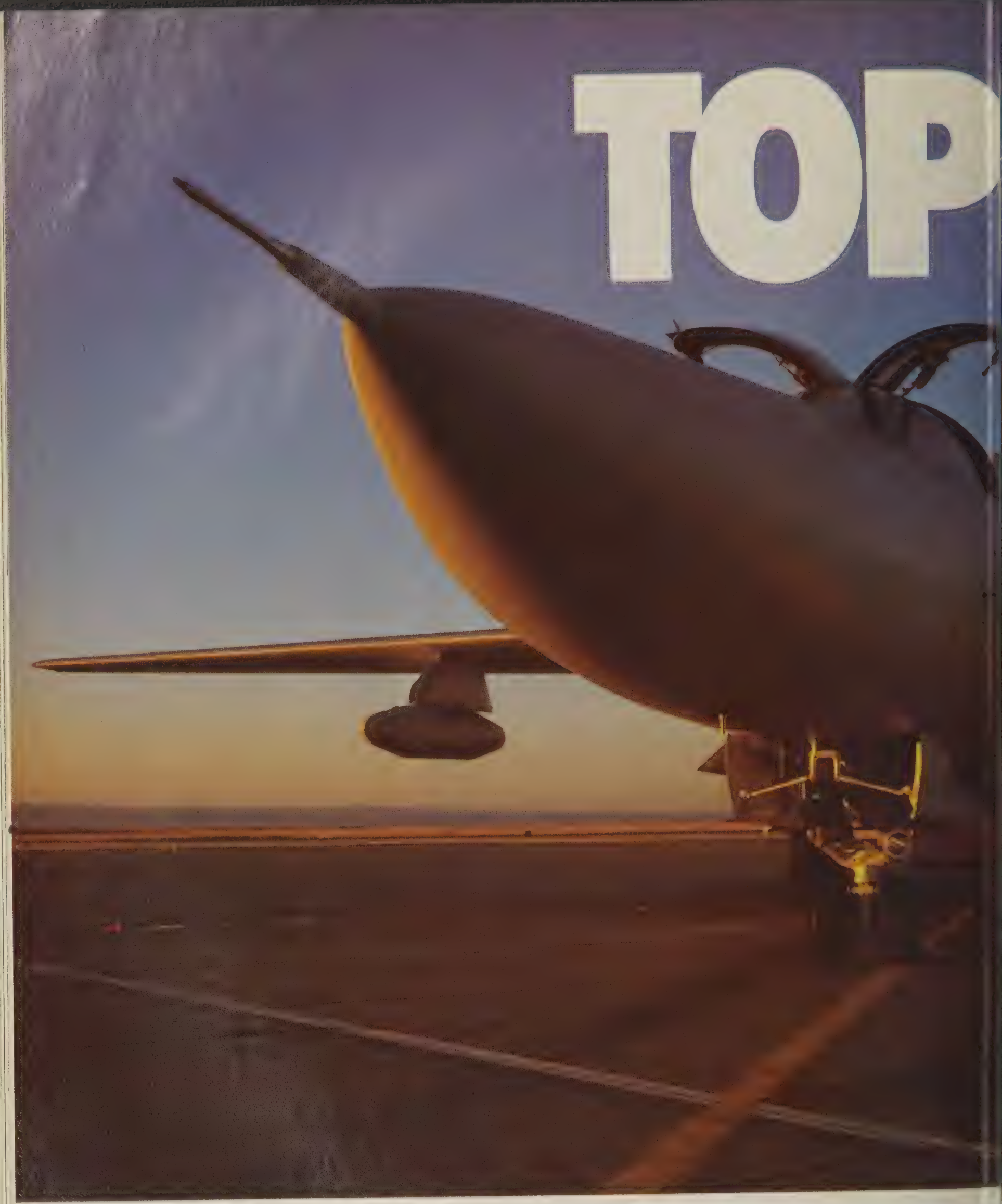
neuverable in the hands of a single tank-hunting soldier who may find it necessary to crawl, run, jump or hide. He must be able to fire down into the street below from a window or roof. The minimum range could be as short as ten yards. This is the weapon American ingenuity must now produce.

In 1950, our eyes had been on the atomic bomb, the strategic air command, on the unlikelihood of any more wars fought by light infantry. We were nearly done in by a rusty T-34 tank driven by a North Korean recruit.

Today our eyes are fixed on outer space, on an export war between machines; scientists, not soldiers, are thought to be required. Watch out, Ollie Connor!

With a program for five light divisions (four active and one National Guard), the Army has made a reasonable and timely organizational move. With the 6th Division deeply embedded in its Alaskan duties, Gen. Wickham will dispose of just three new light divisions (7th, 10th, 25th) in the strategically mobile and immediately ready force. Combined with the two "special" divisions (82nd and 101st) there will be five Army light infantry divisions out of an active force of 18. Considering the open-ended and far-flung exposure of this nation, its allies and interests, it is hard to argue that this is an extravagant number.

If the utility of one or two light divisions in NATO is accepted, then the program makes eminent sense—sense, that is, when the antiarmor problem is solved, sense insofar as the special conditions which favor the use of such forces are thoroughly understood, and sense to the extent that light divisions are seen as just one important element of a balanced force.



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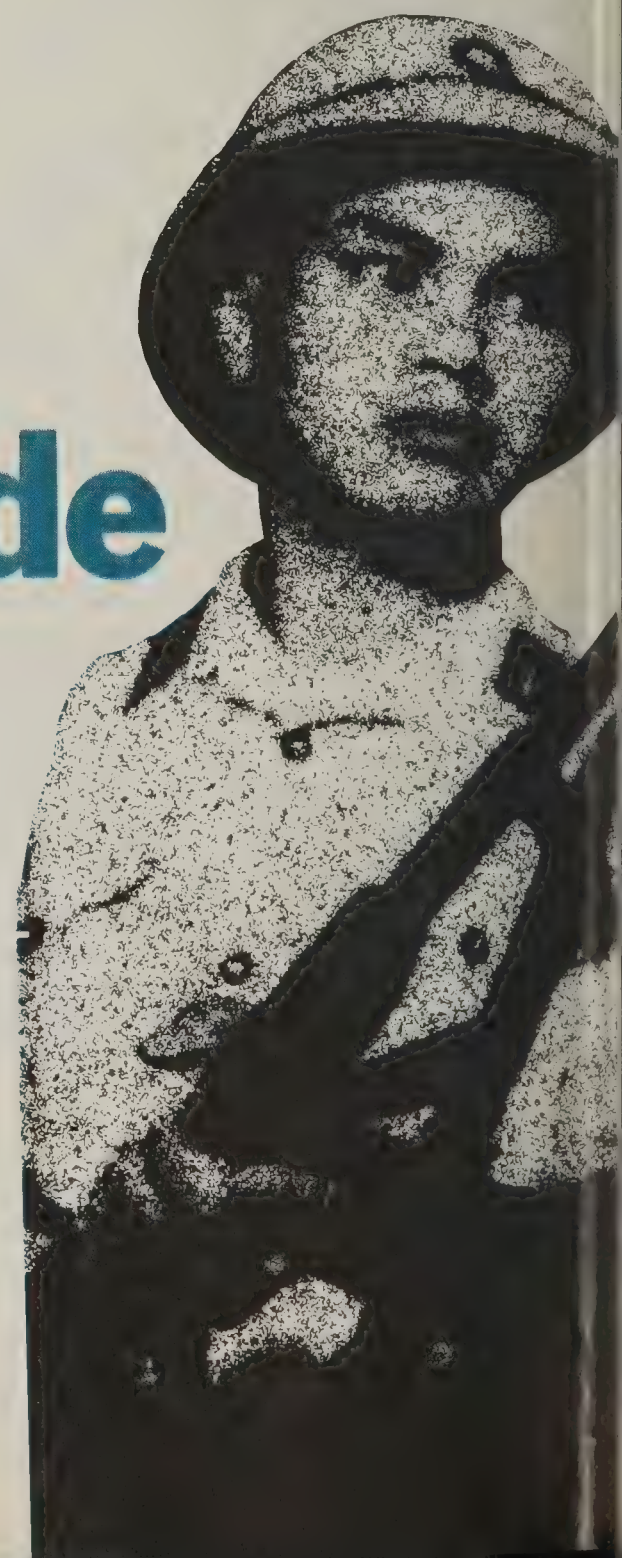
Far from being the irrelevant dead letter that some critics suppose, the armed forces Code of Conduct for prisoners of war can serve as an inspirational ideal and a unifying rallying point under the harshest of circumstances—the testimony of Vietnam war prisoners makes the point clearly and eloquently.

By Greg Eanes

Does the Code Of Conduct Still Apply?

During the war in Vietnam, many American prisoners of war (POWs) wrote, recorded and signed statements that were derogatory to the United States and the American war effort. For the most part, these statements were forced from the American POWs after weeks of torture.

Some, on the other hand, were made freely and enthusiastically, and in direct conflict with the U.S. Military Code of Conduct. With the failure of the U.S. government to charge or prosecute those Americans returning from North Vietnam who failed to heed the Code of Conduct even in spirit and, in some cases, who incited subordinates to disobey direct military orders from senior-ranking personnel, the question must be asked: is the Code of Conduct still applicable to today's service members?



The Code of Conduct was written in 1955 after revelation of the mistreatment and the questionable conduct of individual U.S. POWs returning from Korea. The code was to serve as a guide for the behavior of all American service members who might be captured in future conflicts. The concepts of the code were not original but were merely a written version of military traditions and principles dating back to pre-Revolutionary War days.

The conflict in Vietnam was different from other wars in which the United States had been involved because it was an undeclared war with no clear military objectives or defined military fronts. It was also the first conflict in which U.S. servicemen had a written Code of Conduct to follow. It was in the jungles of Southeast Asia and dungeons of North Vietnam that the code and its principles were severely tested.

The government in Hanoi knew that it could not defeat the United States on the open battlefield, but felt it could win its political objectives on the propaganda front. According to John G. Hubbell in *P.O.W.* (1976), the communist government in Hanoi:

> . . . would bring a weight of world and American opinion against the American war effort in Vietnam, and in time that weight of opinion would prove to be irresistible. . . . Hanoi set out to enlist the aid of its American prisoners on what it deemed to be the war's most important front.

The most frequently broken article of the code was perhaps Article V, which contains the statement, "I will make no oral or written statements disloyal to my country and its allies or harmful to their cause." Although it sounded simple to follow, it was not, and American POWs found out in a short time the extremes to which their North Vietnamese captors would go in order to obtain "confessions" and antiwar statements.

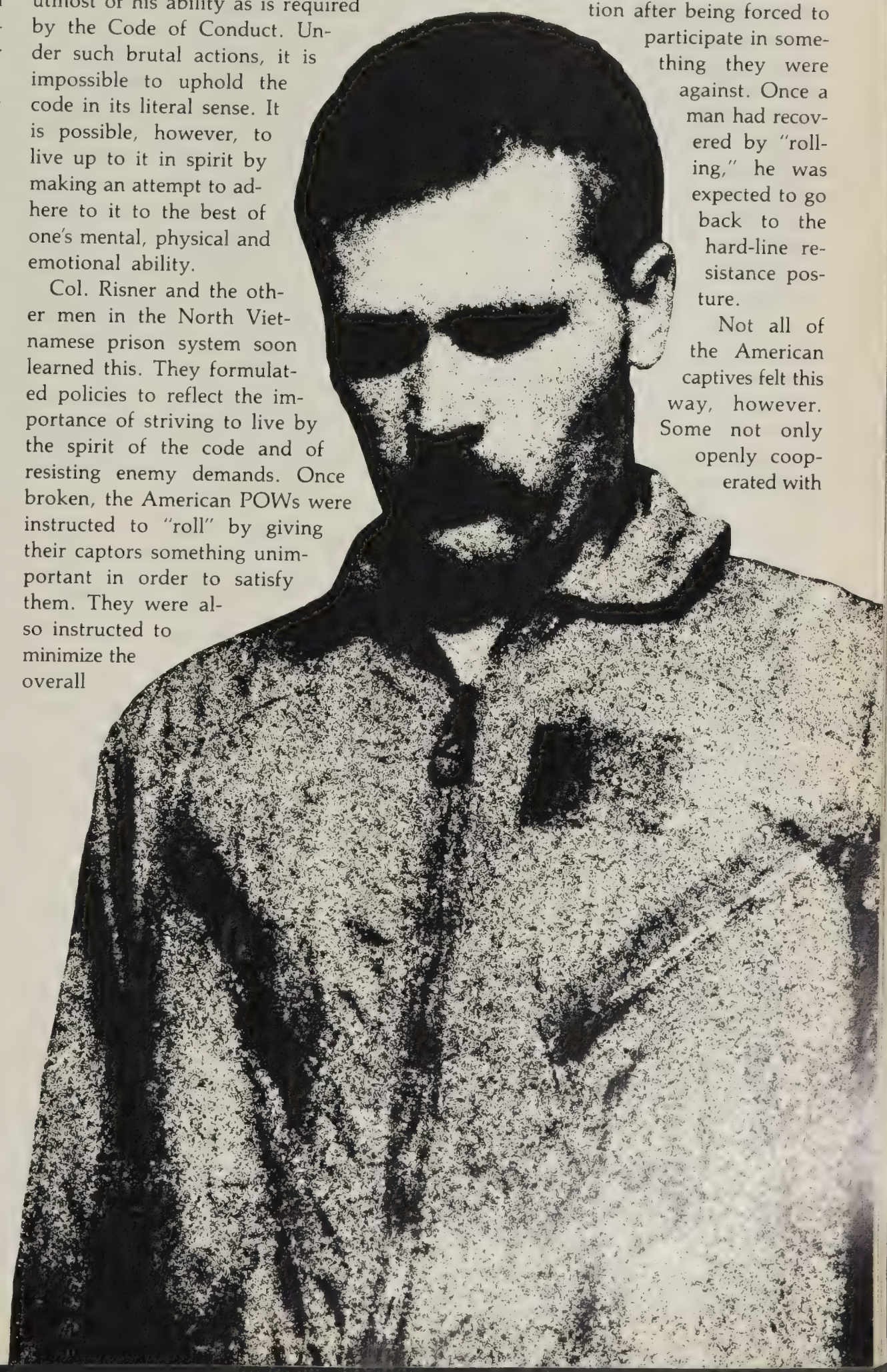
One example is that of Air Force Col. Robinson Risner, the senior-ranking officer prisoner in Hoa Lo Prison in December 1965. Col. Risner underwent a session of torture for a simple statement. He was blindfolded, tied, beaten and led around on the end of a rope for hours before he was taken into an interrogation room and slammed to the floor.

After several more hours of torture, Col. Risner signed a "statement of apology to the Vietnamese people." He had been broken, but he had resisted to the utmost of his ability as is required by the Code of Conduct. Under such brutal actions, it is impossible to uphold the code in its literal sense. It is possible, however, to live up to it in spirit by making an attempt to adhere to it to the best of one's mental, physical and emotional ability.

Col. Risner and the other men in the North Vietnamese prison system soon learned this. They formulated policies to reflect the importance of striving to live by the spirit of the code and of resisting enemy demands. Once broken, the American POWs were instructed to "roll" by giving their captors something unimportant in order to satisfy them. They were also instructed to minimize the overall gain of the enemy by misspelling or mispronouncing words so that any American who read or heard the statements would know that they were made under duress.

In this way, American POWs were able to undermine North Vietnamese propaganda efforts and gain some self-satisfaction after being forced to participate in something they were against. Once a man had recovered by "rolling," he was expected to go back to the hard-line resistance posture.

Not all of the American captives felt this way, however. Some not only openly cooperated with



From an AP/Wide World photo

the North Vietnamese; they joined them. One group of enlisted men called the "Peace Committee" made tapes and wrote statements for the North Vietnamese and Vietcong which denounced U.S. involvement in Indochina. Some even made appeals to U.S. soldiers to leave their units and join the North Vietnamese.

One member of the committee appears to have gone out of his way to help the enemy. He asked the North Vietnamese camp commander if he could write something to support the antiwar movement. His offer was refused, but he wrote a statement anyway. Surprisingly enough, instead of being thanked for his "contribution," he was criticized for his bad spelling and grammar. This criticism did not stop the young man, though, as he is known to have made over 30 antiwar recordings. One was addressed to President Richard M. Nixon:

> I no longer want to fight for you, or anyone like you. In fact, I won't ever again fight for your kind of American democracy. I will, as I said, fight for my real American people and country. Not you, Mr. President, because you don't represent the real American.

This young man willfully violated the Code of Conduct and admitted that, although he was subject to some harassment for breaking camp regulations, he was never tortured. Another tape he made accused a fellow American prisoner of shooting 15 South Vietnamese prisoners at point-blank range. This broke Article IV of the code, which requires, in part, keeping faith with fellow prisoners. He placed the welfare and possibly the life of the accused prisoner in danger.

There is also the case of a Marine lieutenant colonel and a Navy commander who had one of their own conversations taped and widely broadcast. The two men, according to author Hubbell in *P.O.W.*:

> . . . emphatically assured each other that America's Vietnam intervention was deplorable, that the undeclared war was illegal, that their captors had every right to call them criminals and that they were subject to prosecution as such. They agreed that since the American prisoners in North Vietnam were criminals, the U.S. Military Code of Conduct did not apply, that the captives would be foolish to abide by it. They made it clear that they had no intention of adhering to the code, and reminded each other that imprisoned criminals in the United States got time off for good behavior.

The Navy commander later expressed regret at his actions and rejoined the other POWs in their resistance. The Marine continued his actions until the end of the war, even going so far as to incite subordinates to disregard orders from the senior-ranking officer prisoner.

Department of Defense policy, at the conclusion of hostilities, was not to press charges or prosecute returning POWs for anything they may have done while in prison. Individual POWs were free to press charges, however, and the eight members of the Peace Committee, the Marine officer and another naval officer were charged with a variety of offenses including aiding the enemy, conspiracy, carrying out a conspiracy, mutiny, soliciting other prisoners to violate the Code of Conduct, and causing or attempting to cause insubordination and disloyalty. Although grounds were found for prosecution, all charges were dropped by the various department secretaries, and th men were discharged or retired from the services.

(The only man to face prosecution fo collaboration with the enemy was M rine Corps PFC Bobby Garwood aft his return from Vietnam in 1979, s years after the signing of the Paris Pea Accords. Although acquitted of dese tion, punishment for other charges i cluded forfeiture of back pay, reductio in grade and dishonorable discharge.)

Because of the failure of the U.S. go ernment to prosecute former POWs wh willfully violated the Code of Conduc the question of whether or not the co is applicable to today's service memb must be addressed. This is a questi many military men were asking, and, 1976, the Defense Review Committee w established to "reaffirm the validity the Code of Conduct for its intend purposes or to recommend such chang as necessary." The committee's investig tion included interviews with ex-POW and hostile peacetime detainees, expe in POW behavior and representativ from organizations concerned with pr oners of war.

The Code of Conduct

Article I

I am an American fighting man. I serve in the forces which guard my country and our way of life. I am prepared to give my life in their defense.

Article II

I will never surrender of my own free will. If in command, I will never surrender my men while they still have the means to resist.

Article III

If I am captured, I will continue to resist by all means available. I will make every effort to escape and aid others to escape. I will accept neither parole nor special favors from the enemy.

Article IV

If I become a prisoner of war, I will keep faith with my fellow prisoners. I will give no information or take part in any action which might be harmful to my comrades. If I am senior, I will take command. If not, I will obey the lawful orders of those appointed over me and will back them up in every way.

Article V

When questioned, should I become a prisoner of war, I am required to give name, rank, service number and date of birth. I will evade answering further questions to the utmost of my ability. I will make no oral or written statements disloyal to my country and its allies or harmful to their cause.

Article VI

I will never forget that I am an American fighting man, responsible for my actions, and dedicated to the principles which made my country free. I will trust in my God and in the United States of America.

GREG EANES is a Navy intelligence specialist who works as an instructor at the Navy's West Coast Survival, Evasion, Resistance and Escape (SERE) School in San Diego, Calif. He also writes and edits the command's quarterly publication.



These three American prisoners of war were paraded by their North Vietnamese captors for visiting celebrities during the December 1972 bombing of Hanoi.

AP/Wide World photo

Almost all of the former POWs ex-ressed support for the code, crediting it s a great aid to their survival because it rovided a framework by which to live id a unifying philosophy to work to-ard. The former POWs seemed eager express the point that it is not possible adhere strictly to the code in the liter- sense, but that it is possible to abide y it in spirit.

The code is not law but a set of guide-nes meant to help the American service ember through difficult times so that can return home with his honor and lf-respect intact. If a soldier is broken id strays from the code, it must be own that he can regain his honor and sume a new resistance posture.

Former Vietnam captive Seaman Doug egdahl said he viewed the code as some-ing "like the Ten Commandments. Ev-ybody I knew in captivity violated the ode of Conduct if you take it literally, t in spirit I don't think many people d break the Code of Conduct. It's an spirational code."

Former POWs pointed out that the code was important in giving them something to strive for in the way a common goal. This unified camp ef-rt pulled them through and kept them ser together. That unity was necessary the survival and welfare of every in-vidual. Without it, many men may ve lost hope, the will to resist and the ll to live. Many more may have died captivity.

An example of disunity, lack of pur-se and the damage they can cause is parent in the situation of those service-n kept in Vietcong jungle camps in uth Vietnam. Many of the enlisted men re not familiar with the Code of Con-t and were not sure what was expect-of them. There was no solid organiza-n, no clear-cut chain of command, no nmon goal or purpose.

According to former POW Lt. Col. yd Kushner, the law of the jungle pre-led in the southern camps. This dis-ty caused men to lose hope, which y have indirectly hastened the death ten of 22 men in one particular camp.

When the remaining POWs were finally transferred to regular North Vietnamese POW camps, they encountered a team spirit, organization and a defined leadership among the POWs there. The result was a high feeling of obligation to the group or the team. This change of environment caused Col. Kushner's health and mental outlook to improve greatly. Working for a common goal with other Americans helped to pull him through his ordeal.

The Defense Review Committee eventually "concluded that the Code of Conduct is a valid and necessary instrument which establishes high standards of behavior for all members of the Armed Forces." The only changes made by the committee occurred in Article V. The word "bound" was replaced by "required," and the word "only" was deleted for purposes of clarification. The code was not made legally binding. However, portions of it, on recommendation from the committee, were incorporated into the *Manual for Courts-Martial*, thereby making certain articles legally binding and punishable by court-martial.

The Navy had taken similar action as early as 1973 by incorporating parts of the code in the *U.S. Navy Regulations*. This, however, made it legally binding in the Navy and Marine Corps only.

There is no doubt that the Code of Conduct is necessary, and many of the Southeast Asian returnees "attributed their very survival to the inspiration provided by the Code of Conduct," according to the committee's report. This inspiration can best be reflected in a statement Col. Risner made shortly after his return from seven years in captivity:

> In contrast with the every-man-for-himself behavior of many captured U.S. servicemen during the Korean War, the POWs of the Allied POW Wing [in Vietnam] developed a high degree of organization that helped ease life in the camps somewhat. Let me say that we had a comradeship among us, a loyalty, an integrity that may never be found again in any group of men.

With this in mind, there can be no doubt that the Code of Conduct is a valuable document applicable to today's service member. It is a magnificent ethical guide which can assist American military men and women in surviving capture and imprisonment with their self-respect and dignity intact so that they can one day return home with honor.

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CYANAMID

The Philippines

A Portrait Of Communist

By Brett F. Woods

With potentially disastrous consequences for the U.S. strategic position in the Far East, the New People's Army movement in the Philippines has nearly completed its consolidation phase and time is now running in its favor and against the incumbent government.

Violence in the Philippines is certainly nothing new. Stemming from colonial-era roots, economic strains and political and social frictions have existed since independence. Today, however, there is a new threat: a discreet channeling of frictions for the expressed purpose of overthrowing the government of President Ferdinand E. Marcos. It is a threat from within, a disciplined communist insurgency supported by a sophisticated political propaganda infrastructure. It is a classic example of revolution in progress.

Exploiting traditional issues, communist strategists have systematically expanded their influence to the point where they now present a serious military challenge to the Philippine Army (AFP) in some 62 of the country's 73 provinces. Their support grows daily.

Insurgent military strength is now estimated at 10,000 to 16,000 full-time regulars supported by up to one million sympathizers. Even the Catholic Church acknowledged recently that between five and seven percent of the country's twelve thousand priests and nuns actively support the insurgency.

The implications for the United States are obvious. If the communists succeed in usurping power, the United States will find itself in the untenable position of eventually losing two key military installations—Clark Air Force Base and the sprawling U.S. naval facility at Subic Bay. Both are critical elements in the U.S. far eastern defense arsenal.

When viewed in this light, the communist insurgency appears more sinister than merely another "Third World domestic problem." It becomes a matter of U.S. national security and an issue central to the international balance of power.

The insurgent New People's Army (NPA) is *not* a spontaneous popular movemen campaigning for human rights or agraria reform. It is the military arm of the Com munist Party of the Philippines (CPP and follows classic Marxist-Leninist tac tics adapted from Mao Tse-tung and ap plied in a Philippine context.

Serving as the recruiting and proselyti ing organ of the CPP, it provides bot the political and administrative contr for "liberated" areas of the countryside The fact that insurgents use selective vio lence to accomplish goals reinforces or central theme: the NPA's objective is t destroy Philippine democracy and to in stall a system where individual rights and dissent would be curtailed if not abolished altogether. How does the NPA accomplish this mission? Again, with the textbook approach to low-intensity communist insurgency.

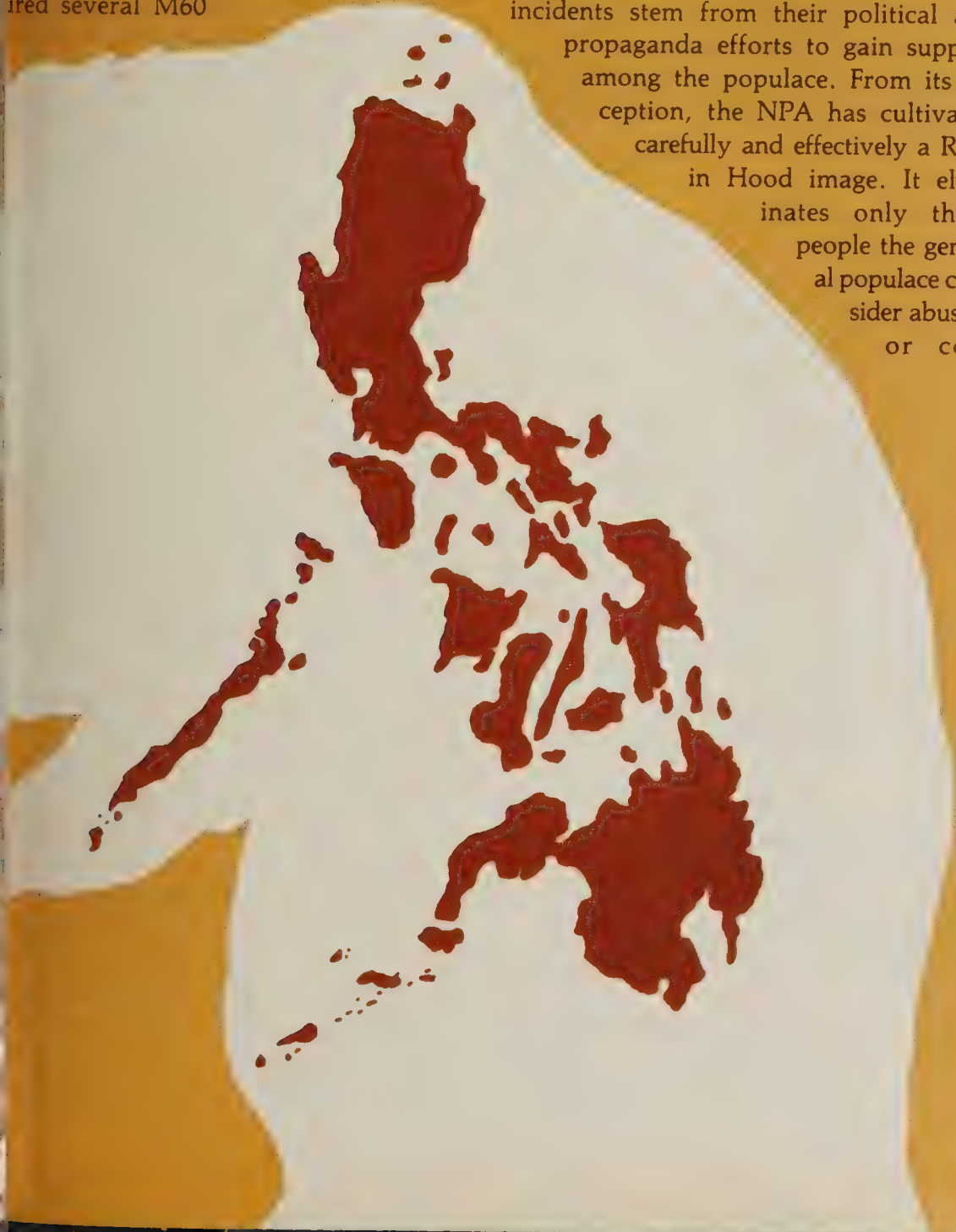
Generally, armed incidents attributed to the NPA fall into two basic categories, the first type consisting of actions directed to acquiring additional weapons or equipment. Since the NPA is, for the most part, self-sufficient, it obtains whatever it needs locally and targets small AFP detachments for most of its supplies. typical strategy would involve the NI surrounding an isolated garrison; demar ing its surrender; and making off w weapons, ammunition, radios and me cal supplies.

Civilian home defense forces are n vulnerable to attack. These governm ne sponsored militia units are assigne t mission of local village defense. Arm with M16 rifles and World War II c

Insurgency

ines, the defense teams usually consist f no more than 12 men and are no match or the NPA. An easy target, the civilian ome defense forces are favored prey to ne NPA and, inadvertently, provide a ubstantial source of equipment to the nsurgents.

Estimates as to the number of weapns actually possessed by the insurgents ary from 10,000 to 20,000 units. They re known to have capured several M60 machine guns, as well as a considerable number of M79 grenade launchers, which have been used with devastating effect against government troops in numerous skirmishes in which the NPA displayed greater firepower than the AFP. Additionally, intelligence sources indicate that the NPA routinely captures sufficient ammunition to sustain its current operational level indefinitely.



The second major type of NPA armed incidents stem from their political and propaganda efforts to gain support among the populace. From its inception, the NPA has cultivated carefully and effectively a Robin Hood image. It eliminates only those people the general populace consider abusive or corrupt. NPA assassination teams, termed "sparrow units," are assigned to murder those the people identify as "bad elements" among military or civilian officials, and swift "people's justice" is meted out to cattle rustlers and other local criminals.

As a practical matter, the NPA no doubt makes some errors which could anger the people. These oversights, however, are exceptions to the rule. The NPA, for the most part, appears to take great care to use violence in a calculated fashion for maximum political effect.

The NPA also makes a political statement by selectively targeting the so-called "crony capitalists" who, due to their closeness to President Marcos, have allegedly received some economic advantage from supporting his government. In response, the NPA targets their holdings, plantations and timber concessions. Even Imelda Marcos's public works projects have been attacked frequently, thus destroying millions of dollars' worth of buildings and equipment nationwide.

The sophisticated insurgents are also quick to exploit local grievances. Government and private projects such as water conservation, power generation and industrial revitalization efforts often result in a limited disruption of the local populace. Taking the side of the people, the NPA finds their attacks on particular projects applauded by the locals, resulting in even broader popular support for the cause.

Labor disputes, pay and, in some cases, environmental issues are exploited to portray the insurgents as champions of the people's rights. They are champions who promise revolution and the redistribution of power to their supporters.

Tactically, the NPA predicates the expansion of the communist movement on its ability to move out of remote, moun-



Philippine President Ferdinand E. Marcos during a 1984 inspection of army units fighting communist insurgents in the mountains of northern Luzon.

AP/Wide World photo

tainous base areas to the lowlands following successive waves of operational activity. The plan is to surround cities and take them over in a final offensive similar to the tactics used successfully in Nicaragua.

To begin this process, the NPA sends out advance parties to nearby villages to make initial contacts. The first villages contacted are typically those most remote from established government centers or facilities. NPA cadre attempt to befriend villagers by helping them with chores around the home and even working in the fields alongside them. As a matter of practice, the insurgents stay in the homes of local families and make a point of paying for everything they need.

Once the advance party penetrates a village, it seeks to recruit locals to the cause by exploiting a particular local grievance, such as an alleged "military abuse" by the Philippine Army. The foothold thus established, NPA armed units then visit the village to demonstrate their strength and to drive out any government officials who present a challenge to the insurgency. Again, local criminals are rounded up, given speedy "trials," convicted and, of course, executed.

As the communist movement gains converts, party branches are formed and a revolutionary council is established. During this phase, the insurgents organize groups of children and women as mass power bases for additional expansion. Then individual committees on defense, economy and health are formed. Where sufficient weapons are available, the NPA also establishes a local armed defense force.

At this stage, the insurgency is all but complete. The final step occurs when the Party Revolutionary Council actually replaces the legitimate village government and emerges as the ultimate organ of political power within a particular geographical area.

Once a village has come under NPA control, a new advance party is selected and dispatched to the next target area. The process begins again with each success widening the areas of insurgency and consolidating communist influence closer to major population centers.

In some areas, particularly on the island of Mindanao, organizing efforts within the cities are already well under way. In Davao, one of the country's major cities, sparrow units operate extensively, thus requiring daylight military patrols by the AFP. Elsewhere, most other cities have already been penetrated by groups bent on developing and promoting a protracted people's war.

Communist infiltrators work among the disaffected and unemployed to weaken and isolate the Marcos regime. They also direct support to existing organizations hoping to influence them in a direction helpful to the movement. Organizations protesting President Marcos's government are, of course, given priority. Once penetrated, the communists attempt to win over others to the insurgency and wrest control of the organization from its legitimate leaders.

Failing this, they attempt to press the group into actions designed to discredit and embarrass the Marcos government. Their most recent efforts resulted in the NPA organization of rallies and protest marches throughout the Philippines following the death of opposition leader Benigno Aquino.

The NPA carefully couples expansion work with efforts to capitalize on its gains. Those areas already under communist control are visited regularly by NPA cadre to check on progress and to exhort new converts to even greater gains. The communist theory in use here is painfully simple and patently Marxist:

> The pond where the fish swim should be both wide and deep. If the pond is wide but shallow, the fish are easily caught. Likewise, if the pond is deep but narrow, the fish will also be endangered.

In the Philippines, the theory is expanding into fact, and from fact into practice. The insurgency spreads.

During consolidation and capitalization, the NPA typically adds intensive classes on communist theory to its initial propaganda themes of capitalist corruption and government military abuse. These indoctrination "teach-ins" are given a high priority in areas already under NPA control. Their success is noteworthy. Even the Philippine Army admits that peasants encountered during military operations appear genuinely committed ideologically to revolution.

Again, the NPA seeks to attain power

BRETT F. WOODS is a free-lance writer who served in the U.S. Army Special Forces in Vietnam and was a Secret Service special agent.



An aerial view of the naval air station at Cubi Point, part of the major U.S. fleet base at Subic Bay; the other main U.S. military facility in the Philippines is Clark Air Force Base.

n the Philippines through a long-term strategy of "people's war." The key element is time—time to expand and strengthen their forces, time for consolidation of power bases, time to isolate the Marcos government and time to mobilize the general population for armed rebellion.

The longer the conflict continues, the greater the government effort required to quell the rebellion. Well under way, the ongoing Philippine insurgency has been growing steadily since 1969. Fifteen years of communist success and gradual erosion of anti-insurgent capability have elapsed; time which now appears to have been working against Ferdinand Marcos and for the NPA.

From the insurgents' point of view, their approach to the people's war envisions the struggle in three distinct phases. The first stage, the *strategic defensive* or the building, expanding and consolidation phase, is all but complete. The second stage, the *strategic stalemate*, is reached when insurgent strength more or less equals that of the government and the tug-of-war over critical cities, towns or territories becomes conspicuous, resulting in the escalation of military activity on both sides.

The third stage, the *strategic offensive*, the critical point of no return. When this level of insurgency is reached, government forces have been isolated, weakened and forced to go on the strategic defensive, thus completing a total reversal of roles with the insurgents and creating a general public conception of imminent insurgent victory over oppression.

Based upon the scope of NPA operations, it appears today that the communists are rapidly nearing the time when they will ease into the strategic stalemate phase of their war. Although the AFP has successfully kept the NPA from achieving the one-to-ten ratio of troops necessary for open warfare, it is admittedly spread thin as it is forced to divide its attention throughout the countryside on numerous islands.

If fighting should escalate or the NPA should decide to expand its operational areas, it will become increasingly clear that the AFP will not be able to muster the resources necessary to sustain or win a major outbreak in hostilities without a substantial increase in strength and mobility.

The Philippines is a country being ripped apart by communist insurgency. It is also a country in obvious danger of becoming the next domino to fall if left ignored. The insurgency threat is real and, at a minimum, American efforts to deter a communist victory should equal this threat.

It is a matter which, if left to itself, could result in Subic Bay becoming the Cam Ranh Bay, Vietnam, of the 1980s—another base for the Soviet navy. Such is the portrait of insurgency left unchecked. Such are the Philippines today.

Just Desserts

Plebes at the U.S. Military Academy were once required to serve beverages and cut dessert at the family-style tables in the mess hall. Failure to memorize an upperclassman's preference for a particular meal or a "butchered" dessert cut incorrectly meant the difference between whether or not the freshmen got what was termed a "full and sufficient meal."

All tableside duties were performed at attention with eyes transfixed on a small crest affixed to each plate. The six or seven upperclassmen at the table were more than generous with their supervision, which they gave with great glee to the hapless plebes. Some allowances were made, however, and each plebe was permitted to carry a small cake and pie template in his hat in order to more accurately dissect desserts.

This was not without its hazards, however, as the dessert had to be cut within a prescribed time in the proper amount of servings, which was usually undetermined until the end of the meal.

This caused a frantic rush among the plebes at the end of each table to cut the dessert and send it for approval to the senior cadet on the other end, who then determined if the number of servings matched the number of cadets wanting dessert, and that all portions were fairly and equitably cut.

A plebe who hastened to cut a cherry pie one evening did so with the result that there were more pieces of pie than cadets at that particular table. As he pondered his predicament, the upperclassmen became increasingly hostile at the unexplained delay. Before the upperclassmen could react, however, the quick-thinking plebe grabbed a knife, thrust it into the center of the pie and stirred it vigorously.

Lifting the pie in the prescribed manner, he announced to his amazed upperclassmen, "Sir, the dessert for this meal is cherry fruit cup. Who would care for a serving of cherry fruit cup?" Taken aback by the plebe's initiative, the upperclassmen allowed the plebes to continue their meal unmolested while they all ate a serving of cherry fruit cup.

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Breaking The Language BARRIER

By Maj. P. Wayne Gosnell

The bilingual challenge has been issued. Thanks to a unique Army educational program, it is being answered by the Army Reserve Officers' Training Corps (ROTC) cadets at the University of Puerto Rico (UPR).

For cadets from Puerto Rico, becoming bilingual is the key to becoming an officer. An innovative English language program administered by the Army ROTC and the Puerto Rico Army National Guard helps Spanish-speaking cadets become bilingual Army officers. The Army ROTC English Language and Intercultural Communication Program at the University of Puerto Rico is proving to be a major element in the future readiness of the total force.

The changing course of world events makes it evident that the Army must include Spanish-speaking, bilingual officers if it is to respond to various contingency scenarios throughout Latin America. The changing face of the Army itself dictates that attention be paid to developing a core of bilingual–bicultural leadership which will be responsive to its needs.

Intensive English language training in ROTC units at the University of Puerto Rico is providing the Army with many of the bilingual officers needed to match the growing number of Spanish-speaking soldiers in the ranks.

The U.S. Army historically has been a mirror of the American population in general. Today, Hispanic citizens account for 6.4 percent of the national population. By the year 2000, Hispanics are projected to number 41 million and be the nation's largest minority. Hispanic soldiers now make up approximately 4.2 percent of active Army enlisted strength, but their numbers are likely to increase dramatically in the coming decades.

Will the Army have the Hispanic officer leadership to meet the challenge? Only 1.2 percent of today's Army officer corps are Hispanic. Unless the Army can attract and retain competitive officers from Hispanic backgrounds, it will likely find itself with a widening cultural and ethnic leadership imbalance which could be detrimental to the continued effectiveness of the organization.

The Army's major source of Hispanic officer leadership is the University of Puerto Rico's Army ROTC program. The program produces 48 percent of the Army's annual Hispanic ROTC officer accessions. With a tradition of service in the U.S. Army spanning most of this century, the UPR Army ROTC program ranks among the nation's largest in terms of total officers commissioned.

The program is vital to the nation's long-range defense posture. Yet, until recently, large numbers of UPR ROTC cadets could not compete in the officer procurement system because of poor English language communication skills. In recent years, dozens of Army lieutenants from Puerto Rico have failed the officer basic course.

In many instances, lieutenants failing the course have had their commissions revoked and have returned to Puerto Rico as civilians. The cost to the Army in terms of both monetary loss and lost human potential has been enormous.

In order to determine empirically the English language proficiency of cadets, a test was obtained from the Defense Language Institute–English Language Center at Lackland Air Force Base, Tex. The English comprehension level (ECL) examination was administered in the fall of 1981 to military science, fourth year/senior (MS IV) cadets with shocking results.

The ECL scores revealed that if senior ROTC cadets at the University of Puerto Rico had been applying for admission as freshmen to a typical mainland university, and if they had been held to the same English language admission standards as international students, less than 50 percent would have qualified for admission.

Although English is widely spoken in Puerto Rico, it is a second language for the majority of the island's population. Although all ROTC courses are taught exclusively in English and despite the fact that ROTC cadets were perhaps the most "English-motivated" students in the island's universities, their English language skills were not sufficient for them to be competitive with their mainland peers.

A study at the ROTC detachment level focused on identifying a solution to the problem.

Mounting a comprehensive English testing and evaluation program, the detachment collected and analyzed empirical data. Proposals were made and approved. Funding was granted to launch a "counterattack" on the English language challenge.

In order to increase the number of Hispanic officers within the Army officer corps, a program which addresses the English language deficiencies of Army ROTC cadets at the UPR has been implemented. Teaming up in the attack are the ROTC, the Puerto Rico Army National Guard and the Defense Language Institute–English Language Center. This ongoing program consists of three major components.

A summer English language and military orientation program is taught at the Puerto Rico National Guard's English Technical Language School, Camp Santiago. Initiated during the summer of 1983, this program has proved successful in increasing not only the cadets' basic English language competency, but also their overall confidence in actively using the language.

Cadets live and study 24 hours a day, five days a week in a disciplined, English-speaking military environment. In addition to classroom practice, cadets are assigned leadership positions where they learn to take charge—in English.

An on-campus English language maintenance program involving noncredit, free, informal ROTC English language workshops is taught by university-approved professors who teach English as a second language. The workshops provide a structured environment in which cadets practice and maintain their English skills.

The existence of such workshops in the ROTC program has lent credibility to the seriousness with which the Army views the English language challenge. The workshops serve as a reminder to cadets that if they desire an Army commission, they must be prepared to work hard to acquire full bilingual proficiency.

Finally, selected ROTC graduates attend post-commissioning English language training at the Defense Language Institute–English Language Center. ROTC graduates who are not ready to be fully competitive in the officer basic course may attend up to 16 weeks of intensive, post-commissioning English language training.

The results of these three components have been impressive. In the first two years of implementation, the program has raised the English comprehensive level scores of cadets dramatically. For example, in the fall of 1981, less than 5[illegible] percent of the MS IV cadets at the University of Puerto Rico–Rio Piedras could have been admitted to a mainland university; two years later, the figure had risen to more than 86 percent. By commissioning day the following spring, almost all were bilingual.

In the summer of 1981, the UPR–Rio Piedras cadets had ranked 109 out of 11[illegible] in detachment rankings at the annual ROTC advanced camp at Ft. Bragg, N.C. In the summer of 1984, they had increased their standing to 42 out of 111, with two cadets ranking among the top ten cadets in the advanced camp.

Observers in both advanced camp and officer basic courses have noted the impressive turnaround in the performance of cadets and lieutenants from Puerto Rico. They are succeeding where they once failed. They are taking their place and making their reputations as effective Army officers—officers who are fully bilingual and capable of providing bilingual–bicultural leadership for the Army of tomorrow.

MAJ. P. WAYNE GOSNELL is a Texas Army National Guardsman serving in the Title 10 Active Guard and Reserve Long Tour Program as manpower staff officer, National Guard Bureau. He served previously as Army National Guard assistant professor of military science at the University of Puerto Rico and holds a doctorate in communication from the University of Texas, Austin.

That Evil Smirk

On my return from the South Pacific in July 1944, I was among the "walking wounded" being processed through Letterman General Hospital in San Francisco. Treatment and facilities at Letterman were outstanding and, although the food was excellent, the hospital administrators were campaigning vigorously for food conservation.

On the walls of the mess hall were signs urging us to clean our plates and not to waste food.

Over our table was a cartoon of Adolf Hitler with an evil smirk on his face. The caption underneath read, "When you waste food, Hitler smiles."

One morning after a rather indulgent night on the town, one of my buddies was so hung over that he turned green as we went through the chow line. After sitting down at our table, he made a valiant attempt to swallow a forkful of scrambled eggs and bacon, but it was just too much for him.

He pushed his plate away and looked up at the smirking picture of Hitler and said, "All right, you monster. Laugh your stupid head off."

LT. COL. FRANK F. RATHBUN
U.S. Army Reserve, retired

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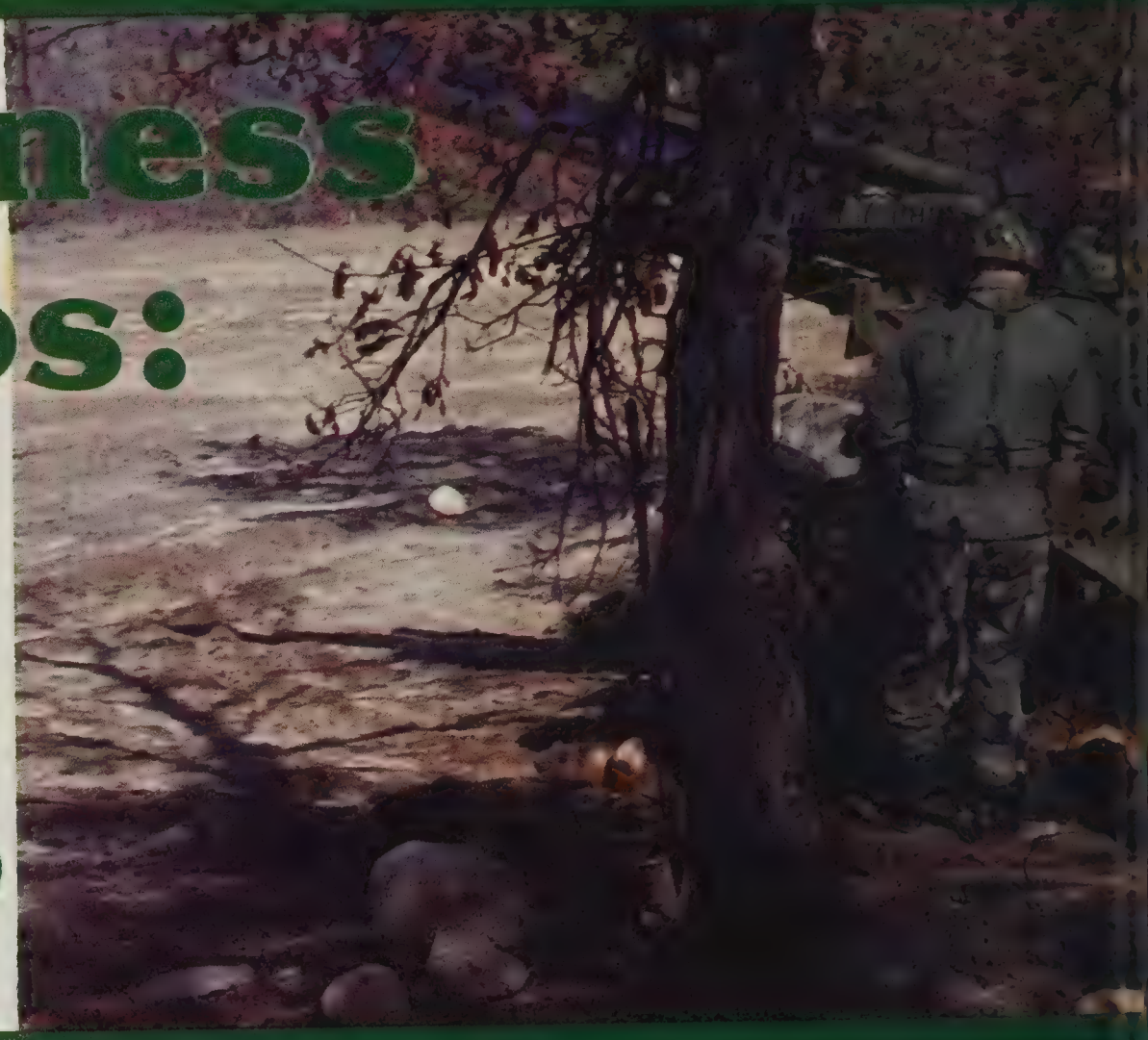
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Readiness Groups: What Are They?



By Col. Jamo C. Powell

What is a readiness group? Each year approximately one thousand officers and senior noncommissioned officers ask that question when the Military Personnel Center (MILPERCEN) informs them that a tour with a readiness group is in the offing.

I asked that same question three years ago when I was told that I would be the commander, Readiness Group Devens (RG Devens), at Ft. Devens, Mass. I knew that readiness groups had something to do with assisting the National Guard and the Army Reserve, but I had no idea how that was accomplished or how readiness groups were organized to perform their mission.

Looking back, I was woefully ignorant about my assignment. Like many of my active Army contemporaries, I believed that assignments with or in support of the reserve components should be avoided because they took those assigned out of the "mainstream" Army.

Much has been done in recent years to change that perception. Foremost, of course, is the fact that an ever-increasing reliance is being placed on the reserve components' credibility in peacetime and capability in war. The National Guard and the Army Reserve represent about one third of the Total Army's combat arms strength and roughly 70 percent of the combat service support capability.

The reserve components are absolutely essential to national security, and duty with them is important. Implementation of the full-time unit support program and the widespread interest it generated during its development have helped increase awareness of this importance.

Additionally, much has been said and done about modernizing reserve components' arms and equipment. These and other initiatives have not only enhanced reserve components' readiness, but have also contributed to a better understanding by the rest of the Army of their mission and capabilities.

There are 29 readiness groups scattered throughout the United States at Redstone Arsenal, Ala.; Ft. MacArthur, Calif.; Pi

idio of San Francisco, Calif.; Denver, Colo.; Patrick Air Force Base, Fla.; Ft. Gillem, Ga.; Ft. Sheridan, Ill.; Ft. Benamin Harrison, Ind.; Shilling Manor, Kan.; Ft. Knox, Ky.; Ft. Devens, Mass.; Ft. Meade, Md.; Selfridge Air Force Base, Mich.; Ft. Snelling, Minn.; St. Louis, Mo.; Ft. Bragg, N.C.; Ft. Dix, N.J.; Seneca Army Depot, N.Y.; Stewart Air Force Base, N.Y.; Ft. Sill, Okla.; Ft. Indiantown Gap, Pa.; Oakdale, Pa.; Ft. Buchanan, R.; Ft. Jackson, S.C.; Ft. Sam Houston, Tex.; Ft. Douglas, Utah; Ft. Lee, a.; Ft. Lewis, Wash.; and Ft. McCoy, isc.

Most were established in the early 1970s; have the mission of assisting reserve mponents units in improving their readiss and ability to mobilize. This is acmplished by providing branch-related d functional training assistance to troop ogram units during their weekend drills d two weeks of annual training.

Initially, the readiness groups were subdinate to nine Army Readiness Regions RRs). The ARRs were established to improve the command and control of Army Reserve units, and to assist and monitor the training of National Guard units.

As an example, RG Devens (and two other readiness groups) belonged to ARR I. ARR I was commanded by an active Army major general, was headquartered at Ft. Devens, and had the six states of New England and New York State as its area of responsibility. The other eight ARRs were similarly structured, each having sufficient readiness groups to carry out the training assistance mission for its particular area of operations.

The ARRs were later designated ARMRs (Army Readiness and Mobilization Regions) to recognize and emphasize the importance of the role the ARMRs and readiness groups played in enhancing unit ability to mobilize quickly and effectively. In 1983, a decision was made to disestablish the nine ARMR headquarters; as a result, the readiness groups now report directly to their respective numbered continental army headquarters.

Interestingly, no serious thought seemed to have been given to eliminating the readiness groups as part of the ARMR disestablishment plan. The readiness group "assisters" apparently had established a reputation for providing high-quality training assistance sufficient to escape reductions in manpower.

The term "assisters" is used, as opposed to "advisors," to describe the members of a readiness group. While there is an element of advice and counsel inherent in the training assistance they provide, their primary function is to assist the unit and that usually requires a degree of involvement beyond providing advice. They teach classes; plan, conduct and control training exercises; help units develop their yearly training plans; act as on-call troubleshooters; and, if necessary, arrange for mobile training teams to assist in those rare areas where the readiness group has no expertise.

No two readiness groups are organized alike. Generally, their tables of distribution and allowances reflect the type and



Organizational realignment has allowed active Army advisors to Reserve and National Guard units to concentrate on training assistance, without the conflicting responsibilities of inspection and evaluation.

number of units they support. Some have a strength of as few as 65 personnel; the largest (RG Redstone) has an authorized strength of 151. Over the years, the groups have developed internal structures unique to the peculiarities of their operating areas.

The size of the branch assistance teams is generally, but not precisely, dependent on the number of units supported. For example, RG Devens has nine field artillery officer and NCO assisters to support 11 field artillery battalions. There are four armor assisters to support four armor/cavalry units.

In the case of functional training, a relatively small number of assisters must cover requests for assistance from all units supported. For example, seven adjutant general assisters provide administrative training assistance to the more than five hundred National Guard and Army Reserve units RG Devens has responsibility for assisting in the six states of New England.

The large number of units RG Devens supports, coupled with a sizable area of operations, has forced the group to resort principally to a "bottom-up" approach of providing training assistance. Units identify training shortcomings that they cannot correct themselves and request the necessary training assistance from the readiness group. The request is passed through the unit's chain of command to ensure that the required assistance cannot reasonably be provided within reserve components resources.

Once approved by the unit's higher headquarters and received by the readiness group, the request for assistance becomes a job for a specific assistance team. Multiple requests for the same team for the same training period are handled through direct negotiation between the affected team and the units involved. Every effort is made to honor all requests for training assistance.

Some readiness groups employ a "top-down" system of providing training assistance support. The essential difference between the two approaches is that this method attempts to distribute available man-days of training assistance equitably to all supported units. Once the unit knows how many man-days of assistance it has been allocated, the unit identifies for its supporting readiness group the specific types of training assistance it requires (for example, squad tactics, battalion training management system, fire direction, staff training exercises and the like).

The top-down system works best where there are a limited number of units to support. One of its major advantages is that it enables the readiness group to do a better job of forecasting training assistance requirements for the entire training year. Conversely, the bottom-up method provides limited opportunity for long-range forecasting of training requirements, but does provide a great deal of flexibility to respond to unprogrammed requests for support. Both methods work. Most readiness groups employ a combination of the two.

Readiness groups have always tried to avoid the appearance of evaluating or inspecting the units they assist. If the unit commander believes the training assisters pose a threat, he will be reluctant to invite them into his unit. If he does invite them, he may not be likely to openly discuss the unit's problems in a way that will make the most effective use of their ability to assist.

With the demise of the ARMRs, there was concern that many of their evaluation and reporting functions would devolve on the readiness groups. Fortunately, that never happened; instead, those functions were absorbed by the continental armies and senior National Guard and Army Reserve commands.

Another tenet generally observed by all readiness groups is that their business is to "train the trainers"—the noncommissioned officers and the officers. The unit personnel responsible for training are trained, rather than merely substituting readiness group assets to perform unit training missions.

Readiness groups train a unit's NCOs so they in turn can train their subordinates in basic soldiering. As a result, a substantial multiplier effect is gained from the training. Just as important, the young soldier is trained in the basics by the appropriate people—his own unit leaders.

For most assisters, assignment to a readiness group provides their initial experience with reserve components soldiers and their units. Perhaps the biggest adjustment an assister must make is in coming to terms with the fact that he has no real authority over soldiers and units. He does not command the unit he assists; he cannot "make" it do anything. This can be somewhat frustrating for a hard-charging young captain who has just commanded an infantry company or a master sergeant who served as a first sergeant a few months earlier.

The successful and effective assister establishes a rapport with the unit leaders as soon as possible. Mutual respect is at the center of this rapport.

MILPERCEN does a good job of selecting qualified, motivated young officers and noncommissioned officers to staff the readiness groups. The skill and dedication demonstrated by these soldiers during the past 12 years have established the readiness groups as important and credible sources of training assistance in the eyes of the Guard and Reserve.

Not long ago I received a letter from an Army Reserve colonel in the Boston area expressing his appreciation for the training assistance one of the readiness group's senior noncommissioned officers had given his unit the previous weekend. Letters of appreciation are not rare in this business, but this particular letter struck a chord with me when it stated, "During the short period you worked with my unit, you earned a reputation for precision, enthusiasm and professionalism."

I cannot think of three words that do a better job of describing the requirements and attributes of a good readiness group assister. RG Devens assisters have made those three words an unofficial motto. It seems fitting, somehow, that they originated with a member of the reserve components.

Assisters also benefit from the experience. Regardless of how much knowledge about their military occupational specialty or branch they bring with them to the readiness group, they leave three years later considerably more knowledgeable.

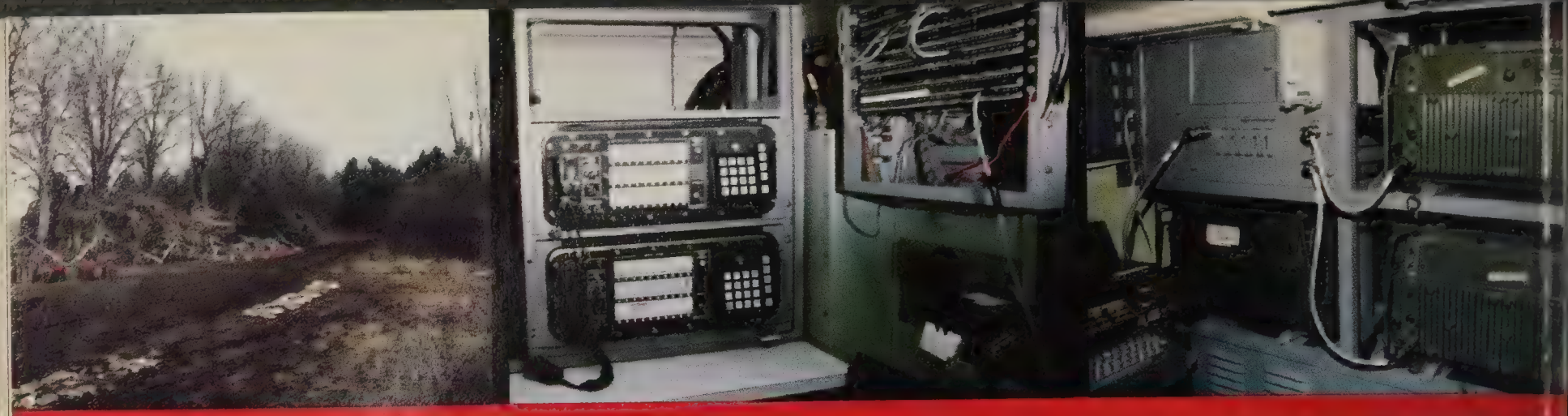
Perhaps more important, an assister has a unique opportunity to learn about the other specialties found within the group. He frequently participates with assisters from other teams as a controller or assister in mobilization and logistics staff exercises. Additionally, combined teams which cut across team lines are often formed to respond to requests for training assistance.

As a result, the assister gains insight into the Total Army that few of his contemporaries can match. He is a more valuable asset to the Army by virtue of his readiness group experience.

Of singular importance, he becomes one of a small but growing group of active Army soldiers who know something about the reserve components and the vital role they play in providing for the nation's defense.

COL. JAMO C. POWELL is commander of the readiness group at Ft. Devens, Mass. He holds a master's degree in business from Tulane University.


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Cortes's Conquest of the Aztecs

Into the Valley o

By Richard T. Bevevino

The conquest of the Aztecs of Mexico by a relatively small contingent of Spaniards ranks as one of the greatest and most daring military exploits in history. This feat is spectacular because the Spaniards were overwhelmingly outnumbered by opposing forces, they were fighting on foreign soil and they confronted a society that was highly m itaristic.

In 1519, the Valley of Anáhuac co tained one of the densest populations the world. It is estimated that the popu tion for all of Mexico was 30 million pe ple, with Central Mexico having appro imately 20 million. The valley alone co



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Deeply embedded in the mythology of the Western World, the sixteenth-century Spanish conquest of Mexico stands as a metaphor for the triumph of daring genius over great odds; yet, the enterprise might not have succeeded had the conquistadores not enjoyed even one or two of their narrow but critical advantages.

Anáhuac

ned several million inhabitants. Tenoch-
.án (now Mexico City), the powerful
tec city-state which ruled the valley,
used a population of between 200,000
d 300,000.

In addition to Tenochtitlán, there were
veral other Indian towns in the valley
th considerable populations: Texcoco, Tlacopan, Xochimilco, Culhuacan, Azcapotzalco, Ixtapalapa, Coyoacan and Tepeyacac. Into this mass of humanity would arrive, initially, some 500 Spaniards. Not only would the Europeans be drastically outnumbered, but they would be hundreds of miles from their base of operations in Cuba.

From the Gulf Coast to Tenochtitlán, the conquistadores would have to penetrate 400 miles into the interior. This arduous journey would require the Spaniards to travel through some of the harshest terrain in Mexico; from the hot lowlands of the Gulf Coast through the Sierra Madre Oriental, crossing elevations in excess of 10,000 feet.

They would oppose an indigenous culture which was acclimated to war; one that had tens of thousands of warriors at its disposal. How then were these men able to overcome seemingly impossible odds and achieve victory over an adversary at the zenith of its power? In order to fully comprehend the magnitude of this military accomplishment, the following must be analyzed: military strategy, armaments, religion, communications and intelligence, legends, allies, command leadership and disease.

When Hernando Cortes and his troops disembarked on the Gulf Coast in 1519, the Aztecs were the main force in the Valley of Anáhuac. Aztec power and dominance emanated from their magnificent capital of Tenochtitlán, located at that time on an island in Lake Texcoco. (Modern Mexico City—population, 16 million—is on the site of Tenochtitlán.)

According to the Spanish, the Aztec Empire's capital was impressive. Bernal Diaz de Castillo, a soldier with Cortes who later wrote of the conquest, stated:

> Some of our soldiers asked whether what we saw were not a dream. I do not know how to describe it all, for we were looking at what had never been heard of or seen before, nor even dreamed about.

From Tenochtitlán, Aztec hegemony spread its tentacles throughout the valley, reaching the Gulf and Pacific coasts. Aztec military prowess was such that supposedly about 350 Indian towns were subjected to tribute demands from their masters in the valley. The tribute system

was the principal method employed by the dominant city-states of Mexico of acquiring merchandise for their people.

In order to acquire merchandise from other Indian towns, force had to be imposed. Failure to comply with stipulated demands elicited severe reprisals from Aztec forces. Tribute became essential for the Aztec state. Without it, the state would have ceased to exist.

The environs of Tenochtitlán were becoming deforested and game was becoming scarce. Consequently, Indian towns had to be subjugated and forced to render payment. Tribute of all types (slaves, sacrificial victims, food, clothing, firewood, animals, precious gems, feathers and armaments) flowed into the Aztec capital to satisfy the growing needs of a powerful and burgeoning metropolis. However, many subjugated towns despised Aztec oppression and their burdensome tribute demands.

Aztec religion also reinforced the constant need for the tribute system. Human sacrifice had been practiced by the Aztecs since their arrival in the valley. Because their religion was predicated on sacrifice to appease the gods, victims had to be found continually. The Aztecs attributed their growth and success to their dieties, and, as a natural conclusion to this logic, the gods had to be rewarded constantly with blood sacrifices.

As time elapsed, more sacrifices were needed to placate the capricious gods. If the gods were not satisfied, the cosmic forces of destruction would terminate the world; the sun might not rise, the rain might not come and the wind might not blow. After the Great Temple of Tenochtitlán (discovered in 1978 in Mexico City) was completed in the late fifteenth century, 20,000 to 40,000 people were sacrificed at the consecration ceremonies, which lasted four days and nights. The victims were prisoners taken in combat and those who were part of the tribute owed to Tenochtitlán.

An example of Aztec dependence on their gods is the "Wars of Flowers." When harsh winters and severe summer droughts descended on the valley in the mid-fifteenth century, the Aztecs beseeched their priests for an explanation as to the cause of wide-spread starvation. The priests' interpretation was that the Aztecs were made hungry because the gods were also hungry. Therefore, difficult times were perpetrated by angry and starving gods. If the gods were properly nourished with increased human sacrifices, however, they would become benevolent once again.



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Hernando Cortes

So the Aztecs and their allies sent a message to three other city-states that were also experiencing the same hardships. They were to start a war for the expressed purpose of capturing prisoners to be sacrificed on the altar. When a sufficient number of prisoners had been captured by both sides, the opposing commanders would call a halt to the hostilities. To die in battle or on the altar stone was known as the "flowery death," hence, these battles came to be known as the "Wars of Flowers."

Incredibly, after thousands were sacrificed, the difficult times ended. The Aztec assumption, naturally, was that the gods had been gratified with the additional sacrifices. As a consequence, the number of sacrifices increased alarmingly from then on. The Aztecs wanted to make certain that difficult times never occurred again.

Thus, a paradox arose: peace became a dangerous state of affairs. War had to be maintained so that victims could be provided to the gods. Not to placate the gods would surely bring ruin. Since people would not come willingly to the sacrificial altar, force had to be imposed. Motivated by sacrificial appeasement, the Aztec state had to be militaristic.

Along with this militarism went cannibalism. When the "Wars of Flowers" ended and the prisoners were sacrificed, various parts of the bodies were cut up and distributed to a starving populace.

The Spaniards, who were shocked and frightened, witnessed the bodies being carved and prepared for consumption.

The military spirit was imbued in the Aztec male from an early age. Upon the birth of a male child, the umbilical cord was wrapped around a miniaturized wooden battle shield and given to a warrior who then buried the contents in the nearest battlefield.

The majority of male children attend

RICHARD T. BEVEVINO is a professor in the Department of Foreign Languages at Edinboro University of Pennsylvania.

school where military precepts and the use of weapons were taught.

Basic weapons used by the warriors were the bow and arrow, sling, spear, lance, club and the "hunting wood." A short spear was launched by means of a spear thrower, a piece of wood with a grooved middle section and a peg at the end to hold the spear. The spear thrower was then attached to a warrior's arm. Thus, the spear was only long enough to fit inside the grooved section. Once the spear was launched, another was placed in the spear thrower. The Aztecs were adept and accurate with these projectiles.

The hunting wood, employed for hand-to-hand combat, was a club of the hardest wood with the shaft or handle shaved to fit the individual warrior's grip. What made this weapon so lethal were imbedded flakes of volcanic glass. A blow from the hunting wood proved effective in disabling an opponent.

Aztec military strategy was somewhat simplistic in that it relied, for the most part, on an all-out frontal assault when attacking enemy forces. These human-wave assaults usually sufficed because Aztec warriors were excellent fighters. They overwhelmed their opponents simply by sheer weight of numbers.

Before launching a frontal assault, the warriors worked themselves into a frenzy by screaming, blowing conch shells, beating drums, performing frightful dances and making threatening gestures. Often, the enemy would be so terrified before the battle started that, psychologically, victory belonged to the Aztecs. On signal, the warriors moved forward, arrayed in their suits of cotton "armor." As they approached their adversaries, the lance, the club and the hunting wood were brought into play.

One aspect of the Aztec military philosophy that proved disastrous with the Spaniards was an emphasis on capturing an enemy rather than killing him. The captured warrior could then be transported back to Tenochtitlán for sacrifice.

In fact, advancement in military rank depended on the acquisition of captives. Once a warrior captured four prisoners and displayed courage in doing so, he could be invited to join one or two elite warrior groups: the eagle or jaguar knights. All high military officers were selected from one of these two groups.



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The Aztec Emperor Montezuma

The Spaniards would become frightfully aware of the Indians' desire to capture them alive for subsequent sacrifice and would fight with herculean efforts so as not to be taken alive. Bernal Diaz later commented that "it was dread that one day or another they would do the same to me. Afterward, I used to feel terrified before going into battle."

Into this environment arrived the Spanish conquistadores in search of fame, fortune and, in due time, slave labor. Unburdened of the Moorish threat and fearful of Portuguese trade ambitions, King Ferdinand II of Aragon and Queen Isabella I cosponsored the voyages of Christopher Columbus.

Because the voyages of Columbus were predicated on discovering a shorter route to the Orient for the purposes of trade, the islands in the Caribbean proved disappointing. There was little gold and silver to be found, but the Spanish did employ the island inhabitants as slave labor. They would become fervent in their desire to convert the natives to Christianity. Proselytism would go hand-in-hand with their quest for gold and silver.

After colonizing Hispaniola and Cuba, the Spaniards looked beyond the islands for precious metals and other trade items. Consequently, explorers were dispatched westward in the hope of locating lands that would prove worthwhile financially. These probes resulted in the discovery of Mexico's Yucatán Peninsula.

The explorers returned with reports that the natives on the coast were more highly civilized than those encountered on the Caribbean islands. Intrigued by the possibilities of finding gold and of converting the natives to the Catholic faith, the governor of Cuba, Diego Velazquez, designated Cortes to lead an expedition to the newly discovered lands.

Diego Velazquez, for political or personal reasons, later attempted to rescind his appointment of Cortes as leader of the expedition. There is some question as to when the order relieving Cortes of his command was issued—before his departure from Cuba or after he had landed in Mexico.

However, Cortes's hasty embarkation from Cuba would suggest that he, at least, was informed of the governor's change of mind. Cortes was not about to

relinquish command. So, in February of 1519, Cortes and his men sailed for the Yucatán. His forces consisted of approximately 550 men, 16 horses, 32 crossbows, 13 harquebuses, ten brass cannon and four falconets.

Disembarking on the island of Cozumel near the northeastern tip of the peninsula, Cortes learned from the natives that two Castilians had been living with the Mayans. Cortes sent natives in search of his two countrymen. One, Jeronimo de Aguilar, was found and joined the Spanish. The other, Gonzalo Guerrero, refused to leave his Mayan wife and family.

Jeronimo de Aguilar recounted his adventure for Cortes. He was on a ship destined for Panama, but a violent storm at sea ran the ship aground. All the other Spaniards aboard had been killed by the natives. Since that time, 1511, he had been living with the Mayans. Hence, he was fluent in the Mayan language and familiar with native customs. He was indispensable as an interpreter from the start of the conquest. Cortes had the means then with which to communicate with the coastal Indians.

Proceeding westward, the Spaniards weighed anchor near the Indian state of Tabasco. Here the Europeans had their first military engagement with Mexican natives. An indigenous force estimated at 20,000 attacked the Spaniards. Strategically deploying his men with a frontal assault and a flanking move, Cortes managed to route the hostiles. European weaponry played an important role in discouraging the natives.

The horses, previously unknown to the natives, proved to have a devastating psychological effect. The Indians, at first, believed that the rider and horse were one terrible creature. Spanish armor prevented native weapons from inflicting disabling blows on the conquistadores while the European sword rendered blows that incapacitated many of the enemy. The cannon and harquebuses belched flame and thunder with lethal results, and the primitives were awestruck by the white man's power.

Although Cortes's men were greatly outnumbered, native armaments paled against steel and firepower. European weapons, here witnessed for the first time in the Americas, proved decisive in subsequent encounters. They had such a demoralizing impact on the natives that the Indians assumed the Europeans were invincible. The Spaniards, numerically at a disadvantage, had one obvious advantage: superior technology in weaponry.

Stunned and terrified by the ferocity of the strangers and their arms, the natives of Tabasco pleaded for peace. As a gesture of friendship, the Indians presented the Spaniards with gifts, among which were 20 Indian women, one of whom, Malinche, was destined to play a pivotal role in the conquest. Malinche, renamed Dona Marina by the Spaniards, was an Aztec who had been sold into slavery to the Mayans. Thus, she was conversant in the Mayan tongue and, more important, in *nahuatl*, the Aztec language. She was the component that completed the communication cycle.

Initially, communications with the Aztecs were established in an awkward manner: Cortes spoke in Spanish to Jeronimo de Aguilar; he translated the Spanish to Mayan for Malinche; Malinche translated the Mayan to *nahuatl* for the Aztecs. When the Aztecs wanted to speak to Cortes, the translation process was reversed. Later, Malinche acquired sufficient fluency in Spanish.

Malinche's importance cannot be emphasized enough. Not only did she accurately translate Cortes's remarks, but she did so in a tone and with a forthrightness that left no doubt in the listener as to Cortes's intentions. Her acquaintance with Aztec customs and culture provided Cortes with invaluable insight, an intelligence advantage that the Aztecs did not possess with regard to the Spaniards.

Bernal Diaz, in his memoirs, wrote that without Malinche, the conquest would not have been possible. However, because of her aid to the Spanish, she is treated as a traitor in Mexican history. Fortunately for the Spaniards, she sided with them. Before Cortes embarked on his great adventure into the interior of Mexico, he had the distinct advantages of superior weaponry and communications and intelligence.

Another factor that aided Cortes was the belief of the coastal Indians, especially the Aztec emperor Montezuma, that Cortes was Quetzalcoatl—the long-awaited god who had once vowed to return. According to native legend, Quetzalcoatl (Feathered Serpent) had reigned near Tula hundreds of years earlier. Forced to leave because of some indiscretion he had committed, Quetzalcoatl departed for the Gulf



Coast and embarked on a magic raf promising to return in a One Reed year

Aztec civilization functioned in 52-yea cycles, at the conclusion of which ther was widespread fear that the world woul end. To forestall the destruction of th world, religious festivities were to be hel at the end of each cycle. Within this 52 year cycle were Reed years. A One Ree year occurred every 52 years. One Ree years occurred in 1363, 1415 and 146 Quetzalcoatl had not returned, howeve The next One Reed year was 1519.

Legend was also specific concernin the appearance of Quetzalcoatl: he wa a white man with a beard. This legen was so entrenched in Aztec culture tha Montezuma dreaded the approach of One Reed year because, if Quetzalcoa did return, Montezuma's reign would en

Messengers from the coast eventuall arrived in Tenochtitlán to present Mon tezuma with a message. This "pictu writing" depicted the moving white pyr mids (ships) that housed fierce being After seeing the writing and listening t the accounts of his messengers, Mont zuma became hysterical.



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After the conquest of the coastal state of Tabasco, Cortes faced an incipient mutiny by those fearful of proceeding into the interior; he undercut the dissidents by ordering the loyalists to scuttle the fleet.

f the fierce beings on the coast were eed Quetzalcoatl and his followers, v could Montezuma dare attack a god? vacillated. A One Reed year and the ding of the Spaniards in 1519 favored tes. It was sheer coincidence, but one t prevented Montezuma from taking on immediately against the Spaniards. as the conquest unfolded, command lership became crucial. In retrospect, tes demonstrated decisiveness where ntezuma remained indecisive. Cortes bold to the point of recklessness, olute, courageous, astute and discern- capable of accurately assessing a sit- on and able to exploit every advan-

or example, while at Cempoala, an an town not far from the coast, he ned of the dissatisfaction of tribute- ing tribes. They chafed at providing erial and people as tributes to the ec state. Nonetheless, the Aztec ar- s were so powerful that the subjugat- lid not have the means with which to w off the yoke of their oppressors. ecognizing the apparent dissension ng the indigenous inhabitants toward the Aztecs, Cortes ascertained correctly that the diverse native groups did not form a cohesive unit. He could exploit this lack of solidarity to his advantage. The disenchanted Indians could be used as allies, thereby augmenting his own forces.

Furthermore, while at Cempoala, he was informed of an Indian nation in the interior, Tlaxcala, that had continually defied Aztec forces. Cortes once again interpreted this information as signaling a propitious opportunity to increase his army. If, as the coastal Indians suggested, the Tlaxcalans and the Aztecs were foes, why not employ the Tlaxcalans as allies?

Cortes's compatriots did not share his enthusiasm. They were in unfamiliar terrain, were outnumbered and knew that larger Indian forces resided in the interior. Many of his men balked at continuing. They preferred to return to the islands for reinforcements because there were too many Indians for their small force to fight. Some protested that Cortes was exceeding his orders. They were not charged with exploring the interior. Others feared that by marching inland, their position would be untenable; that they would be cut off from the coast, surrounded by hostile forces.

Cortes was determined not to return to the islands when wealth and fame seemed so close at hand. In one bold stroke, he suppressed the mutinous undercurrent. He ordered Spaniards loyal to his cause to strip and scuttle the fleet. They could remain at the coast or proceed inland to wealth, fame and glory. Using his powers of persuasion, coupled with Montezuma's inadvertent aid, Cortes convinced his men to accept his course of action.

Montezuma's inadvertent aid to Cortes came in the form of gifts delivered to the Spanish. Detailed accounts of the progress of the strangers had been reported to Montezuma. Fearful that the Spanish would venture into his domain and aware that they coveted the yellow metal, he sought a means of diverting their attention away from Tenochtitlán. Presenting the conquistadores with gifts of the metal they desired would perhaps sate their appetites.

Aztec messengers, dispatched by Montezuma and bearing valuable articles, presented the items to the Spaniards at an opportune moment for Cortes. The gifts of gold and silver bolstered Cortes's reasons for continuing the journey to Tenochtitlán. The Spanish naturally concluded that the Aztecs possessed even more wealth.

In August 1519, after establishing a base of operations on the coast (Villa Rica de la Vera Cruz) garrisoned by 150 Spaniards, Cortes departed for Tlaxcala. His forces consisted of some 400 Spaniards and 1,000 Totonacs from Cempoala, who were employed as porters. After traversing the difficult, mountainous area of the Sierra Madre Oriental, Cortes approached the kingdom of Tlaxcala.

Messengers were sent ahead to inform the Tlaxcalans of Cortes's peaceful intentions. Cortes wanted, if at all possible, to avoid hostilities. He could ill afford to lose men or horses. Diplomacy, he as-

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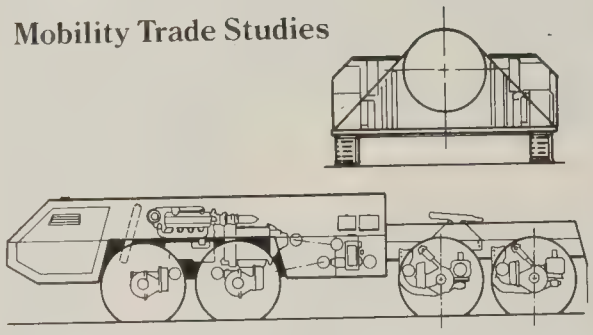
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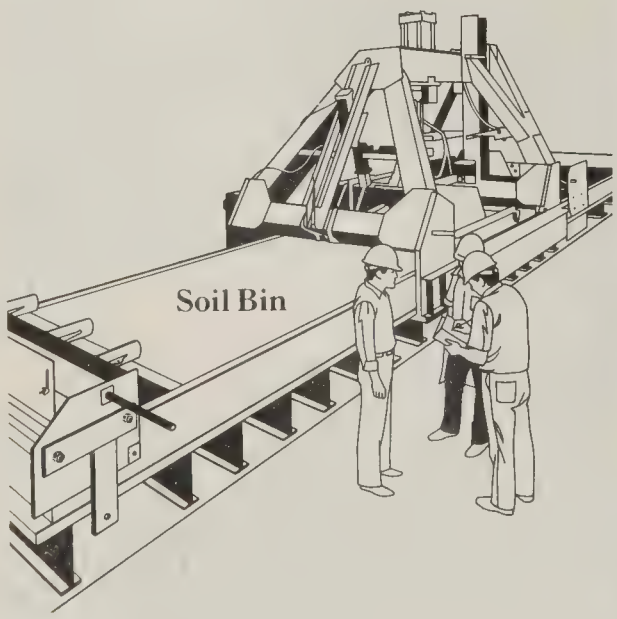
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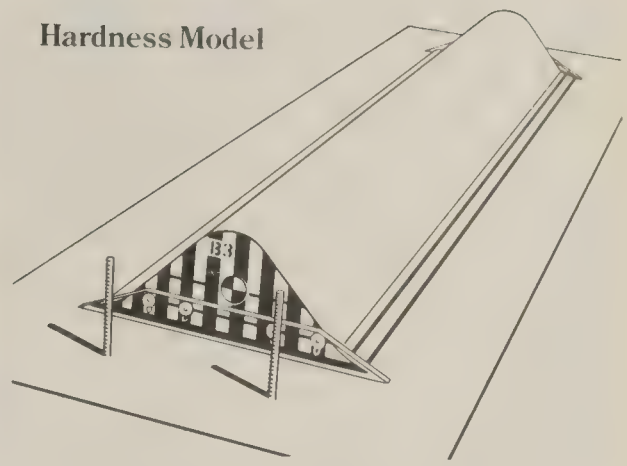
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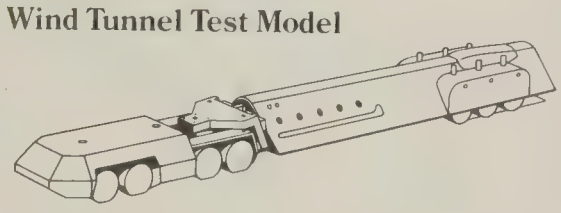


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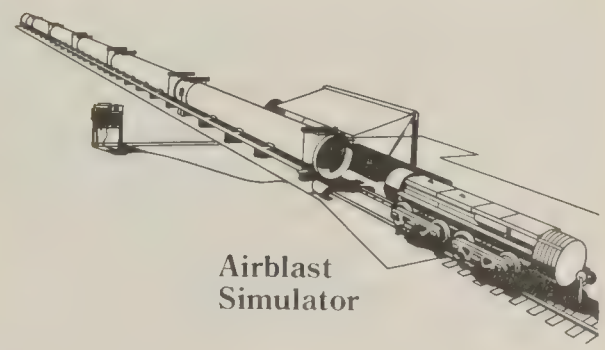


Preliminary concepts and shapes were evaluated during the Direct Course simulated airblast testing last summer.

Wind Tunnel Test Model



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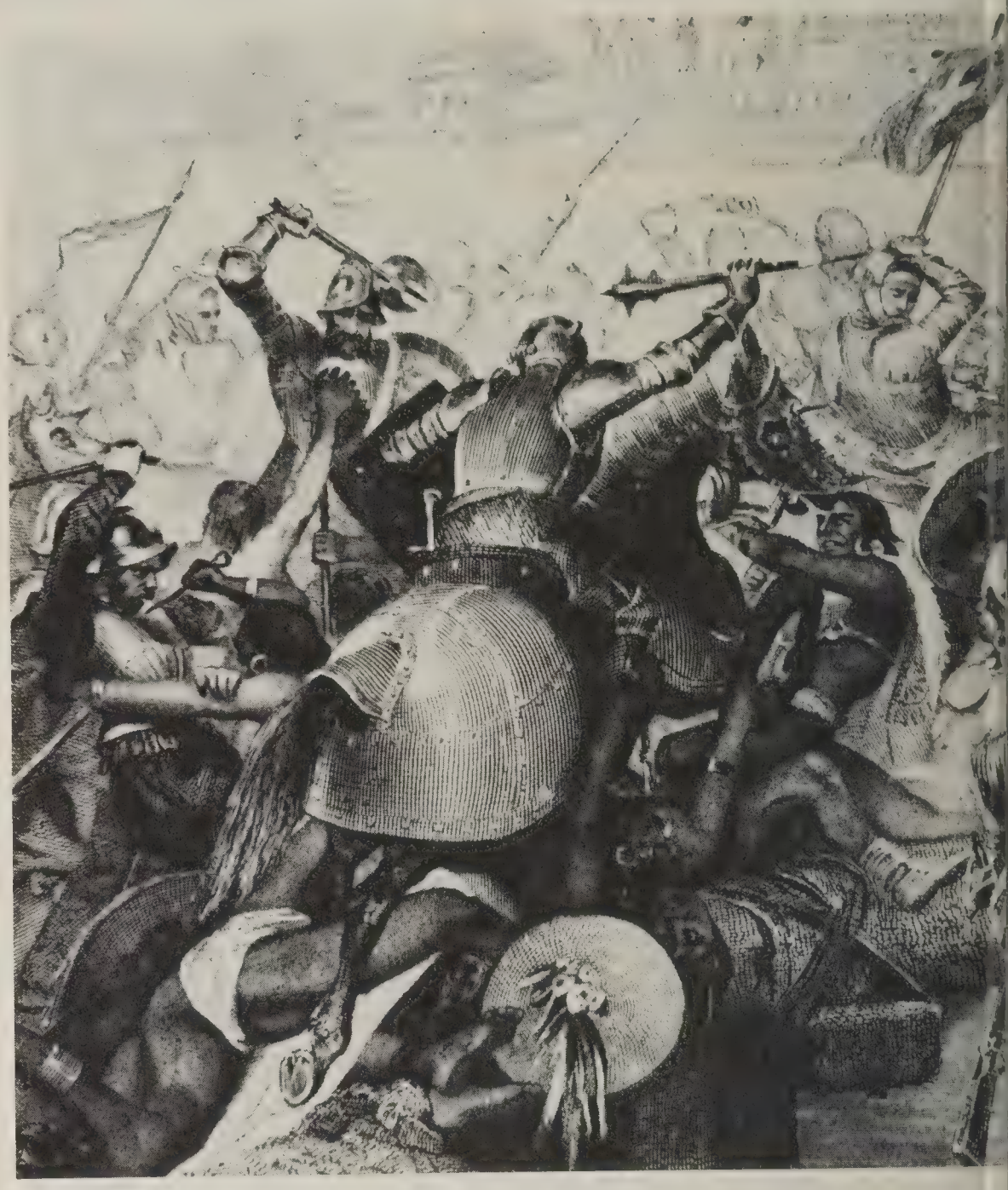
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Additional scaled test facilities have been created to approximate actual operational conditions and to refine the HML concepts.

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GOODYEAR AEROSPACE



The Spanish suffered their heaviest casualties in the retreat from Tenochtitlán in July 1520; the myth of invincibility had been shattered, but the ravages of disease allowed the conquistadores to return only a year later.

sumed, would be the tactic to win over the Indians.

The Tlaxcalans, however, were not receptive to peaceful overtures. Fearful that the new arrivals were friends of the Aztecs, the Tlaxcalans prepared to attack. With no alternative, Cortes engaged a Tlaxcalan army of between 30,000 and 50,000.

Luck, perseverance and military skill enabled Cortes and his remarkable soldiers to extricate themselves from a potentially disastrous predicament. Although the Tlaxcalans mounted an offensive with thousands of warriors, their leadership was divided as to the proper course of action to take against the Spaniards.

Some believed the Europeans were gods. As a result, the force did not present a solid, unified front. In addition, they employed the Indian tactic of charging en masse. The frontal onslaught allowed the Spaniards' cannon to mow down large numbers of Indians.

Spanish weapons, novelties to the Tlaxcalans, were again a decisive factor. Not only were they superior, but the Spaniards were extremely proficient in their use. Although Cortes and his men were suffering from the attacks, he believed in taking the offensive, even against so numerous a foe. Referring to the battle at Tlaxcala, Bernal Diaz wrote:

> One morning when we awoke and saw how many of us were wounded, some even with two or three wounds, how weary we were, how many sick and in rags, and how already 45 had died in battle or from disease or chills, and how the captain himself was suffering from fever, we began to wonder what it was all leading to.

Cortes pressed onward until the Tlaxcalans, like the natives of Tabasco, petitioned for peace. Cortes, through determination, confidence and aggressiveness, had converted a belligerent adversary into a dependable ally. His command leadership, with the bravery and resourcefulness of his compatriots, allowed the conquistadores to attain victory when defeat and annihilation appeared imminent.

Montezuma, conversely, exhibited behavior that was ultimately detrimental to the Aztec state. Indecisiveness, fear and resignation characterized his actions. Not desiring the presence of strangers, who were perhaps gods, in Tenochtitlán, Montezuma again sent emissaries with gifts for the Spaniards.

The Aztec messengers were to inform Cortes that the trip to Tenochtitlán was long and arduous, and that such a trek should not be undertaken. Montezuma's action was one of appeasement. He hoped to placate the European lust for gold. When Cortes informed the Aztec messengers that he was definitely going to Tenochtitlán, Montezuma, on hearing the news, panicked.

Montezuma, like Malinche, is not held in high esteem by Mexicans. He is criticized for permitting the Spaniards to enter Tenochtitlán and for not immediately implementing military action against the invaders.

In early November of 1519, the Sp iards, accompanied by 5,000 to 6,(Tlaxcalan allies, entered Tenochtitl Cortes finally came face-to-face with M tezuma. The Aztec leader's attitude v one of resignation. In his welcoming spe to Cortes, Montezuma, in essence, ab cated his authority. Speaking to Co through Malinche, Montezuma explai how their coming had been foretold. was still uncertain as to who the new rivals were.

Another example of Cortes's ability assess a situation and to implement d tic action to rectify a potential probl occurred shortly after the Spaniard's rival in the capital. While approach the city on one of the causeways (th causeways connected Tenochtitlán to mainland), he realized the precariousn of his military position.

If the causeways were disassemb while the Spaniards were inside the c it would be difficult for them to esc



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Compounding the problem was the fact that the Aztecs controlled the lake, as evidenced by their many ships. The conquistadores had placed themselves in a militarily inferior posture. If hostilities broke out, Cortes and his men would be trapped inside the city.

In order to neutralize this disadvantage, Cortes urged Montezuma to remain with the Spanish in their quarters. Montezuma, after feeble protestations, submitted. The Revered Speaker of the Aztec nation became, in effect, a prisoner in his own city. Cortes's actions substantiate, again, his decisiveness and determination; Montezuma's displayed resignation and submission.

In the spring of 1520, while in Tenochtitlán with Montezuma under Spanish guard, Cortes was notified that a Spanish force of some 1,000 men had landed on the coast. This force had been sent by the governor of Cuba, Diego Velazquez, with explicit orders to bring Cortes back to the island. Cortes's determination again manifested itself. He would not relinquish command after having endured so many hardships and having discovered Aztec riches.

By sending a conciliatory message and gold and silver to Panfilo Narvaez, leader of the force ordered to arrest him, Cortes attempted to persuade his countrymen to join him.

Leaving a small detachment of Spaniards in Tenochtitlán under the command of Pedro de Alvarado, Cortes set off for the coast. There he confronted his Spanish adversaries and, after some heated discussion, swayed them to his cause. Spanish forces tripled with the addition of Panfilo Narvaez's soldiers.

The Spaniards who stayed in Tenochtitlán soon came under siege. After learning of events inside the capital, Cortes rushed back.

He confronted Montezuma and ordered him to lift the siege and give the conquistadores provisions. The Aztec leader replied that the people of Tenochtitlán no longer respected him and would not obey his commands.

The main square of the city was crowded with Aztecs at that time. Cortes grabbed Montezuma and took him to the roof of the building in which the Spaniards were staying, and commanded the Aztec leader to disperse the crowd. Unfortunately, when Montezuma tried to quiet the multitude, his people attacked him with arrows and stones. Several projectiles found their mark and Montezuma collapsed on the roof. He was taken inside where he died, slain by his own people.

Still under siege inside Tenochtitlán, the Spaniards attempted to flee. Their escape was discovered by the Aztecs, however, and the retreat became a disaster. The conquistadores suffered heavy casualties as they were attacked from all sides. They lost approximately 800 men in the battle of Tenochtitlán and subsequent encounters on their way to Tlaxcala. It was early July 1520.

Although Cortes had suffered defeat, he had no intention of returning to Cuba. He was determined to regroup and return once more to Tenochtitlán. The Spaniards made preparations for the return. Their plan consisted of four phases: recruit as many Indian allies as possible; secure the mainland and drive the Aztecs into Tenochtitlán; lay siege to the city and take control of the lake; and, when the siege exacted its toll on the weakened and starved Aztecs, begin the final assault.

In order to control the lake, Cortes had Panfilo Narvaez's fleet dismantled. He employed thousands of Indians as porters and the ships' pieces were thus transported to Tlaxcala, then to Tenochtitlán, where they were reassembled in smaller versions of the originals. Bernal Diaz estimated that a line of porters eight miles long transported the pieces. All of Cortes's men were not convinced that they should return to the capital, but Cortes's determination prevailed once more.

Religion is yet another factor that must be taken into account when analyzing the conquest. To the Spanish, the world was governed by two forces: God and Satan. Catholicism had been triumphant against the Moors and against the spread of Islam. It certainly would sustain them against the heathens in the new lands.

The conquistadores had witnessed the results of human sacrifices, had seen the skull racks and viewed with revulsion the myriad idols adorning the native temples. They were shocked at the native practice of cannibalism and accused the Aztec priests of practicing sodomy. It was their Christian duty to eradicate these evil forces. The Spaniards never wavered in the belief that their god was the one and true god.

Contrary to the conquistadores, the Aztecs believed that the world was governed by the cosmic forces of destruction. Before being elected First Speaker, Montezuma had served as a priest. He was a dedicated adherent to the sacrificial–appeasement approach. The gods had to be mollified so that the world would not self-destruct.

Numerous allies were also an important aspect of Cortes's success. Because the Aztec state was parasitic, tribute was demanded of subjugated tribes. Tribute-paying tribes constantly sought the means to rid themselves of Aztec hegemony. A serious flaw in Aztec conquest was that they never developed any political infrastructure to solidify their victories. Tribute was the primary motivation for conquest. Tribute-paying tribes, initially hostile to the Spaniards, eventually sided with the conquistadores.

Cortes took full advantage of the enmity directed toward the Aztecs by the coastal Indians and, later on, by the Tlax-



Patriot launches a new era in Europea

Ready to take on large numbers of aircraft at all altitudes and in any weather, the Patriot air defense system is now being deployed in Europe. Developed by Raytheon for the U.S. Army's Missile Command, it is 20 to 30 times more effective than Nike-Hercules and will give the Army a significant increase in firepower. Patriot is also being adopted by other NATO forces and Japan.

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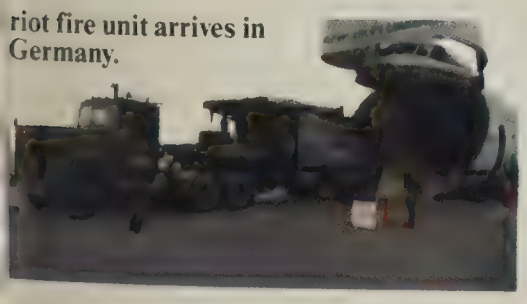
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The death of Montezuma at the hands of his subjects, July 1520.

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calans. Indian allies were employed as spies, porters and warriors. When Cortes reentered the valley to begin operations against the Aztecs, he supposedly counted 100,000 Indians as allies.

Disease, unfortunately, was another ally of the conquistadores. The catastrophic consequences of the white man's diseases were first observed in the Caribbean islands. The island natives succumbed quickly to smallpox and, within a short time, entire island populations were exterminated. In time, measles, typhus and influenza also contributed to extensive demographic losses.

The Europeans had built up immunity to these diseases. The natives had not. Disease would kill more Indians than the Spaniards could ever dream of slaying. From a population of about 25 million in Central Mexico before discovery by the Europeans, the native population would be reduced to roughly one million by the mid-seventeenth century.

Smallpox infected the coastal Indians while Cortes was still in Tenochtitlán. News of a devastating sickness reached Montezuma. The reports were so dire that Montezuma outlawed trade with the affected areas. It was only a matter of time before the inhabitants of Tenochtitlán suffered the same fate.

It has been said that if the Aztecs had pursued the Spaniards with a concentrated, combined effort when they retreated from Tenochtitlán, the conquest would not have occurred. The Aztecs, however, were suffering the ravages of a smallpox epidemic. They were preoccupied with their sick and dying as the disease raged through their city. Elated that they had driven the Spaniards from their city, the Aztecs were bewildered and demoralized by this deadly and invisible enemy.

The psychological impact of smallpox on the natives was dramatic. Why were the strangers not affected by the killing sickness? Only their people died. Were the gods of the conquistadores indeed more powerful than their gods? Had their gods forsaken them? The customary rituals, ceremonies and sacrifices were not appeasing the gods. Thus, disillusionment and doubt thwarted a concentrated effort by the Aztecs to rid their land of conquistadores.

Tenochtitlán fell on 13 August, 1 The siege, intense fighting and starva had taken their toll on the inhabita Cuauhtemoc, the last Aztec leader, quested that Cortes allow his peopl evacuate the city. According to Be Diaz, the evacuation of Tenochtitlán a sorrowful sight:

> So yellow, thin, dirty, . . . they were pitiful sight to behold. Only the dead mained in the city . . . and the grou was as though tilled where they had d up roots to eat and even the bark h been ripped from the trees . . . it is ma ages since a people have suffered so gre ly.

Although the Spaniards were outn bered initially, they excelled in other a Military armaments, strategy, comm cations and intelligence, allies and mand leadership were areas in w they were superior.

The Aztec religion proved detrim to the inhabitants of Tenochtitlán be its practices embittered other Indian ples. In addition, the legend of Que coatl stopped Montezuma from ta action immediately against the Spani Finally, the lethal results of the w man's disease, smallpox, aided the thrust against the Aztecs.

Each factor was of great consequ and each was contingent on the oth is conceivable that if the European not been dominant in one or two of areas, the conquest possibly woul have taken place.

In Storage?

My daughter's active Army fa ily has been living in tem rary quarters for the past six mon with the consequent inconvenie of having most of their househ goods in storage during that peri A few days before Christmas, conversation between my three-y old granddaughter and her 12-y old brother was overheard:

Granddaughter: Santa Claus is coming this year.

Grandson: And why not?

Granddaughter: He's in storag

Col. James M. Wilso
U.S. Army, retired

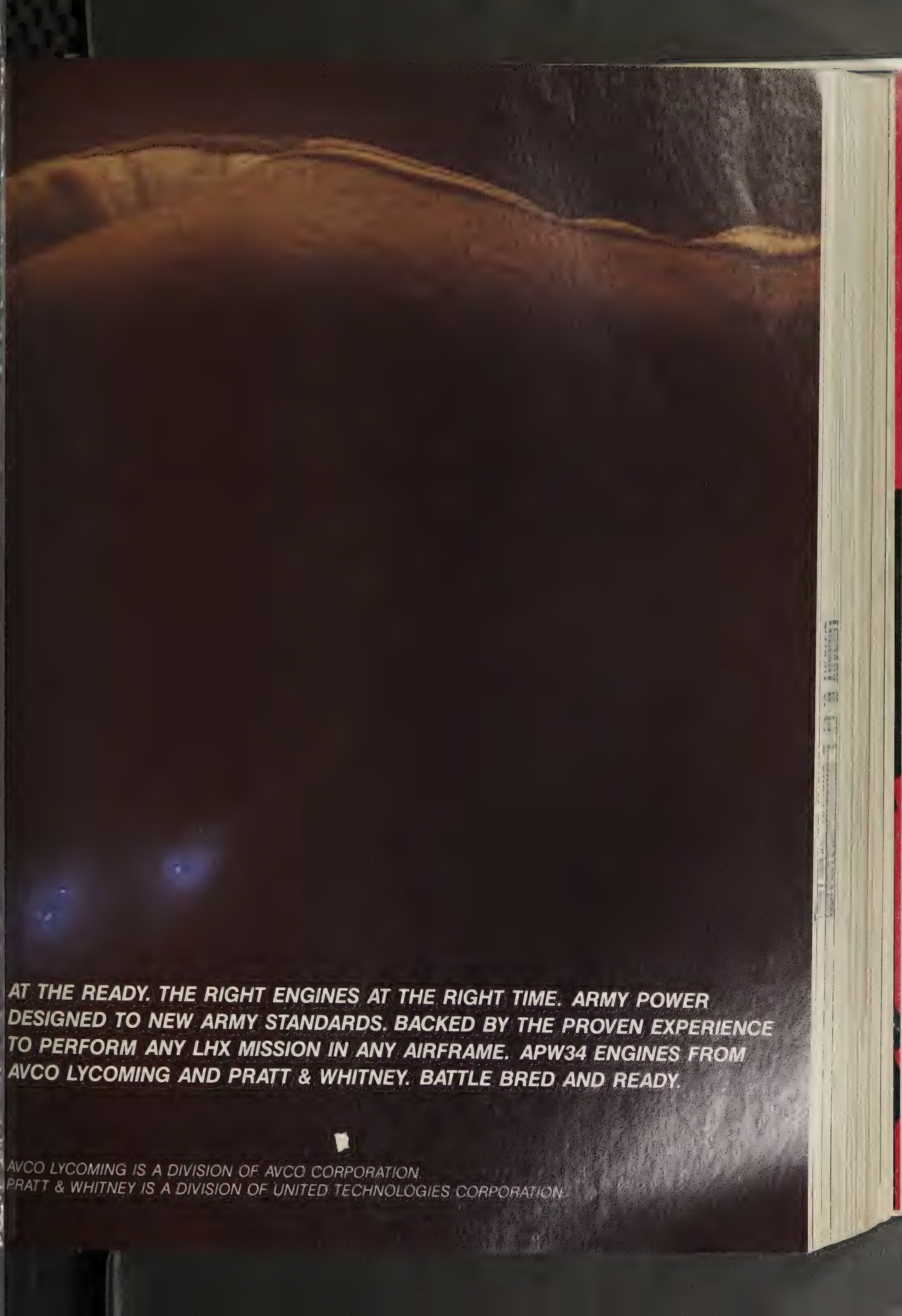
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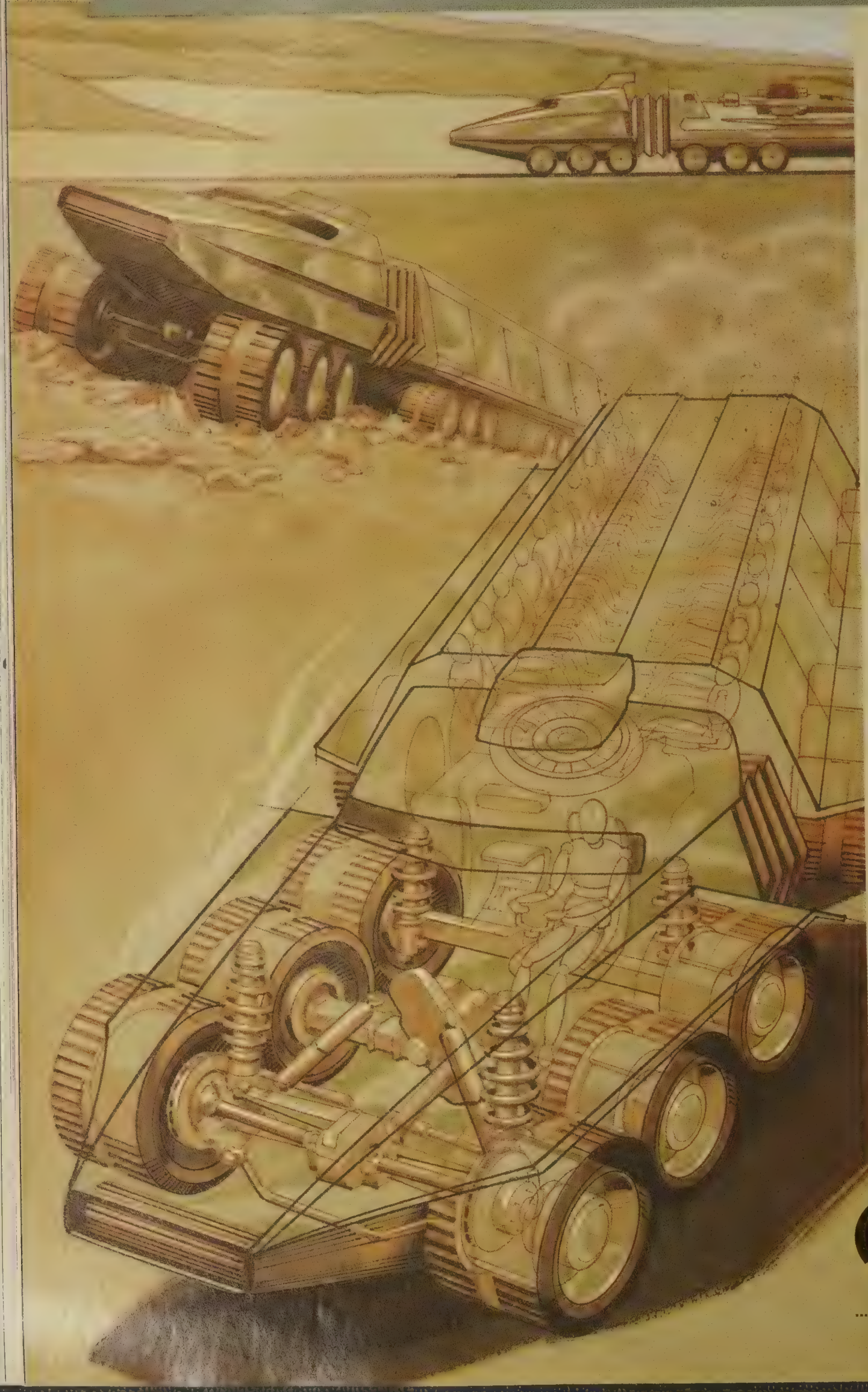
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The Midnigh

By Russel P. McDonald

They did not give medals for shooting medics. That was all right with me. All I wanted to do was get off the "midnight fence." That summer in 1944, to the members of the 452nd Military Police Escort Guard (MP-EG), it represented more than just a fence. It was the enemy.

The midnight fence, as we called it, was a twisted barbed-wire entanglemen It meandered across a field and was most a block long. It formed one side a compound in France where some 1,5 German prisoners of war (POWs) w held while awaiting shipment to Engla or the United States.

Along the south side were tents for 452nd MPEG and the 105th Medical U



ence

Romance intruded on this soldier's elaborate scheme to get out of an especially onerous stint of guard duty by creating an illusion for his superiors.

n treated the wounded prisoners in ıration for their trip to hospitals in nd.

e midnight fence also lay, like rust- eel tumbleweeds, along the deserted side of the compound. It seemed ially ominous on the 12:00 P.M. to A.M. shift. The front lines had moved al miles into France, but the big guns could still be heard. It was not hard to imagine that enemy soldiers had broken through along the unlighted fence line and were, at that moment, sneaking through the thick brush and hedgerows to free their comrades.

The worst thing about patrolling the fence was guard duty from the hours of midnight to four. For some now forgotten reason, I had fallen out of the good graces of a 1st Sgt. Khun and found myself assigned to the midnight fence every night for a week. What made matters worse was that a soldier could not get much sleep in the busy compound before midnight and little after four since everybody else got up at five-thirty.

"I'm getting off this post," I said flatly to Pvt. Jim Martinez. We met at the northeast corner every half hour after checking our respective posts; he on the east patrol and I on the midnight fence.

He cupped his hand to light a cigarette and grunted once. "How do you plan to do that, aside from deserting and getting shot?"

"I've got a plan; a sure-fire one."

Jimmy sighed. "I sure hope it's better than your plan to try to pass me off as a Scotsman back in Glasgow so we could get some free drinks at the pub . . . or the one where we were supposed to liberate the calvados distillery in Cherbourg. . . ."

I ignored his sarcasm and proceeded to describe my plan.

"Jimmy, what's the one thing everybody says about me?"

"You're a 'snafu'?"

"No, besides that. Everybody is always razzing me about wearing glasses, calling me 'four eyes' and saying I can't see."

"True, I remember on the rifle range back in Michigan, you . . ."

"Don't remind me. I intend to use that very thing to get off the midnight fence. I'm going to yell, 'Halt,' then open fire with my carbine down the fence line. When Lt. Puzak gets here, you tell him the truth. Tell him that there was nothing along the fence, as you happened to be here at the corner. I'll swear there was."

"What will that do, except make Lt. Puzak mad?"

"Jimmy, it will prove I can't see well. When the lieutenant realizes that, he'll have the first sergeant take me off night duty. Brilliant, isn't it?"

Jimmy was skeptical, but I was not to be deterred. I looked back down the pitch-black darkness of the midnight fence and in my loudest voice yelled, "Halt! Halt!"

I opened fire, emptying the clip, the bullets zinging into the night, explosions rocking the silence. I grinned at Jimmy as we watched the compound lights flare on and heard men shouting. A jeep motor started and the headlights rounded



the corner in our direction.

The lieutenant and the corporal of the guard arrived in short order, and I put on an excited voice and explained that I had seen a POW trying to escape.

Jimmy Martinez played his part as planned. "I was right here, lieutenant. I didn't see a thing. There was no one."

The lieutenant scowled at me, and he and the corporal searched the fence line, their flashlights bobbing back and forth. After a while, Lt. Puzak said I must have been seeing things and expressed the opinion that I was wasting ammunition and disturbing the entire camp's sleep.

"We will discuss this in detail when you get off duty," he said as he climbed back into the jeep.

Despite Jimmy's "I told you so," I was still confident that my plan would work. After all, the camp could not have a partially blind guard walking the midnight fence. I did start to lose some confidence after meeting with 1st Sgt. Khun about midmorning. I could always tell when he was angry. His thin moustache twitched and he held his fists clenched at his sides as his words came out in short bursts.

"McDonald," he said, "you're lucky. I'm going to teach you a trade."

I grinned. "Gee, Sarge, what's that?"

"I'm going to make you an expert on European soil. You're going to dig a slit trench from here to Berlin." He said several other things, all of which reflected unfavorably on my Army career, my well-being and my ancestry.

At noon I filed into the mess tent, which was used by both medics and guards, amid some snickers and scowls. I made my way to the only table available. As luck would have it, I had to sit opposite 1st Sgt. Khun. His moustache began twitching and he bent a spoon handle.

I glanced uneasily at Jimmy. He was trying to suppress a grin. At that moment, a medic sat down by the first sergeant. As he dipped his spoon into the dehydrated potatoes he commented, "Sarge, you guys are trigger-happy; you know that?"

The first sergeant's moustache twitched. "What do you mean?"

"This morning, about two, I had just gotten off duty. I wanted to see this French woman, Yvette. We had a date to m out in the field and I decided it would faster to take a shortcut across the co pound and through the north fence li I figured the guard wouldn't object.

"Well sir, I couldn't see any guard I just stepped through the barbed-wire tanglement. Just as I got my foot throu I heard the guard yell, 'Halt!' Befor could answer, he cut loose with rifle fi

"I decided the best way to go was b into the compound. I dove through wire, scratching my arms and legs, te ing my best uniform, while the bul clicked at my heels. That destroyed romantic thoughts I had entertained hotfooted it back to my quarters."

First Sgt. Khun glared at me. The c er members in the tent watched. No had ever heard the first sergeant say was wrong about anything. The clo he would ever come was that mom when he muttered, "McDonald, I gu you were right."

After a deadly silence, he pointed bent spoon at Jimmy. "Martinez, should be more observant like McDon here." He turned to the others. "T goes for the rest of you."

Everybody began to eat again. Sgt. Khun turned his attention back me. "Since you're the only one who se to be on the ball, consider the midn fence your permanent post, as lon we are here."

Fortunately, my outfit moved on a couple of weeks and I said goodby the midnight fence. By the way, I n did try to convince anyone ever a that wearing glasses means a person not see.

RUSSEL P. McDONALD, a free-lance writer who served in the Army in World War II, worked as a building inspector for FHA until his retirement.

New Perspective

While attending the ordnan officer advanced course at A erdeen Proving Ground, Md., I w having great difficulty understan ing classroom instruction on the A my's computer program for the i termediate supply system, SAIL Several days of instruction only su ceeded in confusing me more.

Things were put into perspecti for me, however, when I went to t latrine during a break. A magnetiz slap card was attached to the insi of the stall door. On it were t words, "Solution Room."

ROBERT H. ROUTIER

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L T V : L O O K I N G A H E A D

Cerebrations

Getting the Experts' Input Through 'Talent Banking'

here are two kinds of knowledge: what you know and what you know out how to find out what you don't ow.

We know about the first type. Each of is a "book" on the shelves of a "living rary"—the sum of our instincts, heri-ge, education, training, experiences, bbies and travels. This living library is ultimate "expert system," an unhar-ssed amalgam of information that en-psulates the skill and reasoning power all experts.

What we do not know is how to in-x, access, utilize and update the books the expert system. In this age of infor-tion, what is the result of this infor-tion deficiency in terms of resource penditures by the Department of De-se?

The separate services continue to rely a command and staff process that, ile good for twentieth-century wars, l not be able to keep pace with the in-mation demands of war in the twenty-t century and beyond.

The relative efficiency and effective-s of the Army's decision-making pro-s remains a function of organization-design, not information management. ditionally, a staff action, at any level, outed through an organization based a staff directory, organizations and ctions manual, organizational "wiring gram" or, worst of all, the uninformed im of the person assigning the task. he fundamental assumption behind ntion of an outdated command and f process and these organizational ing techniques is that "functional re-nsibility equals functional expertise." reality of the world, or at least the partment of Defense, is that "function-esponsibility for" does not necessarily al "functional expertise in."

he result is that resources, especially e, are expended outside the organiza-for expertise that is already within organization. Why do we expend re-ces outside the organization for re-ch, answers or expertise that the per-three doors down the hall possesses? because we do not know that the ex-ise exists or where, and that is be-se we do not have an index to the ex-system.

the Army knew how to find extant rts, people already in the system and the payroll, it could maximize the wledge base of the Department of nse, thus saving precious resources more pressing requirements.

ow does the Army do that?



The Department of Defense could create the first living library of subject matter experts, a "talent bank." Every person working for the Department of Defense can be a book on the shelves of that library, a part of the expert system.

Each book can be abstracted for expertise—technological, sociological, psychological, physiological, geographical and the like. Each of us has an "expertise profile" or the focused sum of our experiences and knowledge. These profiles, however, have never been written down, collected, automated and collated. If they existed, the collective knowledge base for the Department of Defense would be defined and could be indexed for access, utilization and update.

■ *Indexing.* Library scientists are experts at filtering the "key words in context" from individual expertise profiles. These search words are the keys to indexing. Everyone's name goes into the computer and is linked to his own unique string of search words.

■ *Accessing.* Eventually, each of us will be able to ask a computer for expertise (area under study or search word) and get a printout of all the experts in the Department of Defense, cross-indexed by current assignment and geographical locale, current state of knowledge and availability for work.

We could then tell who the experts are right there in the organization. Then, instead of hit-and-miss assignments and coordination, a staff action can be directed to and looked at by people in the know. Better, or at least more informed, decisions would result.

■ *Updating.* Members of the talent bank could be kept abreast of developments in their fields of expertise through monthly current awareness bibliographies (CABs). CABs are annotated bibliographies that contain the essence of all studies and reports related to the key words listed in each expertise profile. CABs come from the Defense Technical Information Center (DTIC), an information subsystem that is already on-line.

After a person looks at his monthly CAB, he can ask his local on-base or post library to order copies of reports that fit his specific information needs. The library is funded to pay for the reports, which come in microfiche or hard copy. Eventually, each expert could, by computer link, ask DTIC directly for the desired reports.

For example, on Monday morning, you get out of bed, shower and put on your uniform. While eating breakfast, you turn on your home computer and check in with the Department of Defense's worldwide computer-based teleconferencing system, just to see if you have received any messages or assignments during the weekend. Sure enough, the chief had a brainstorm on the golf course Saturday morning and he wants you to solve "X." It, X, is in your functional area, but you do not know anything about X.

You query the computer for "expertise:

X." Ten nanoseconds later, a list of 15 names, with addresses, phone numbers and date of last DTIC update, appears on the screen. Two each are active-duty Army, Navy and Air Force personnel stationed here in the continental United States. One is active-duty Air Force stationed in Korea. One is active-duty Navy serving with the Sixth Fleet in the Mediterranean Sea. Two are retired. The others are civilians who have done part-time contract work for the government. All have access to the teleconferencing system, so you compose a short message describing the problem and send it to all 15.

When you get to the office, you again check in with the computer and find that eight of the 15 experts, including the woman in Korea, the sailor on the ship at sea and one retiree, have responded and are willing to help bust X. Informed problem resolution then begins.

Talent banking is now in use, in primitive form, on ExcelOpers, one of the Army's computer-based teleconference subnets. Each participant has submitted an expertise profile for programming into the DTIC system. Many have already received CABs and copies of research reports. The expertise profiles are on permanent display for all members of the subnet. Automating the system for indexing and accessing has not yet been accomplished.

The Department of Defense, or any one of the services, can create the expert system by harnessing the collective knowledge of its members to create a talent bank.

MAJ. MICHAEL L. McGEE□

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The Colonel As Platoon Leader

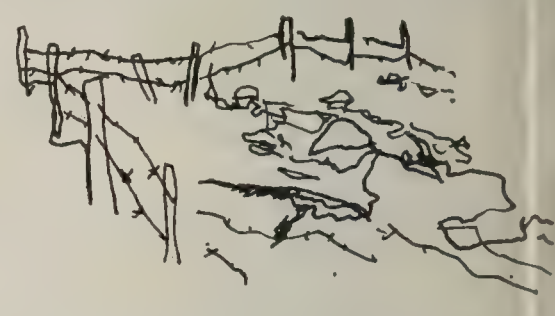
Innovate, be creative, look for alternate ways to solve problems—these are the sage catchwords repeated by Command and General Staff College instructors intent on making students more imaginative in finding solutions to problems. Based on this advice, one of the best ways to improve leadership in the Army is to make colonels platoon leaders.

Think of the lasting benefits derived from assigning a colonel to the role of rifle platoon leader for one or two weeks a year. Placing a combat O6 in a platoon would be a tremendous morale booster and would allow the troops to observe firsthand how a seasoned veteran would handle a variety of problems, ranging from individual personality conflicts within the platoon to sound tactical decisions.

The senior officer could share his unique combat experiences to help bridge the gap between military training and combat realities as a way of assisting the soldier in better understanding what Maj. Gen. Karl von Clausewitz referred to as the deadly "confusion of war."

The exercise would not glorify war but would, instead, present authentic wartime scenarios. These scenarios would, in turn, instill in junior officers an awareness of the need to develop an orderly process for dealing with the vagaries of war on a realistic level by looking to the past as a guide.

Officers with combat experience are a dwindling commodity in today's Army, but an asset the service can ill afford to lose. Inexperienced troops need to be inspired to perform by the actions and deed of others rather than just by paying li service to high ideals embodied in mil tary orders. The difference is that or level of performance is generated by pe sonal encounter while the other is mo a case of reacting to abstract orders. Bo are important, but the former has a mo lasting impact on the development of th individual soldier because it permits hi



to identify with real-world cases.

The adage that a commander never d rects his troops to do anything he wou not do has little meaning unless he is wi ing to lead by example. Simply put, th means getting out with the troops. As platoon leader, a colonel would have unique opportunity to demonstrate h concern for the well-being of his m and be able to gauge the capabilities one of his units.

This concern translates to a willingne and commitment by the leader to endu the same hardships as his subordinat Not only would this show the senior ficer's concern for the welfare of his troo but would most likely raise the perfo mance level of the individual soldier.

To have any credibility, a leader mu demonstrate by example. Such was t case in the recent war in the Falklan where most accounts credit the Brit infantry as responsible for victory. Vi to this success was a willingness by officer corps to lead by example.

When the 2nd Parachute Battalion came bogged down at Goose Green a began taking heavy casualties, Lt. C Herbert Jones laid his rank and life the line to resolve the impasse. Confro ed with an Argentine machine-gun po tion that had pinned down the adva of his troops, Col. Jones took the ini tive.

His courageous movement forward neutralize the enemy stronghold cost h his life, but, ultimately, it inspired oth to act and eliminate the obstacle. So will argue that a lieutenant colonel h no business charging a first-line ene defensive position, but to the men arou him in the heat of battle, his action counted for the success of the missi

Several other payoffs can be deri from colonels working in direct con with a platoon. Not only can a colo impart valuable combat information, he can also furnish insight based on technical and management expertise. T

nd of information needs to be passed
at an individual level to help shape
ture platoon leaders. Lieutenants should
ive the opportunity to observe and dis-
guish these exceptional, and sometimes
btle, leadership qualities firsthand.

A colonel functioning as a platoon lead-
should convey to the troops that se-
or officers are not infallible and, more
portant, should admit that mistakes
ill be made time and again in war. This
an extremely important teaching point
cause it prepares troops to handle suc-
sses as well as setbacks.

A platoon, whether in training or com-
t, will encounter unforeseen delays,
ll be involved in countless land navi-
tion errors and will be required occa-
nally to operate independently of oth-
tactical elements. The Army needs to
pitalize on its successes and overcome
failures, and use failures as lessons
rned to be passed on.

A colonel in a platoon leader's job is
t solely responsible for providing infor-
ation to improve the abilities of small-
it leaders. Information also flows in
other direction. As mentioned, con-
t with a platoon gives the commander
opportunity to judge the capabilities
his front-line troops, a highly impor-
t consideration when trying to assess
performance of better educated per-
nnel who are more apt to question the
hy" in military decision making. This aspect cannot be ignored but, at the same time, does not mean the commander must forego discipline.

A colonel working at the platoon level can also gain a better appreciation for the new weapons systems under his command. Tactics and weapons change over time and, as new systems are introduced into the inventory, a colonel must be aware of the assets and liabilities of each new system (something he may have little experience with) as it is deployed in the field.

Experts agree that the next war may be predicated on responding to a brushfire outbreak, guerrilla warfare, terrorist activities and the like—even more reason for colonels to become better acquainted with small-unit tactics, leadership and weapons deployment.

The platoon-level colonel can also benefit from weight control and physical fitness programs. An officer required to keep up with younger soldiers needs to demonstrate that he, as a leader, is in shape to meet the demands of a platoon. The Army defies logic in this area, however, as once an officer turns 40, requirements are relaxed when just the opposite should occur. The older an officer gets, the greater the need for him to be in better shape to maintain the stamina necessary to command effectively.

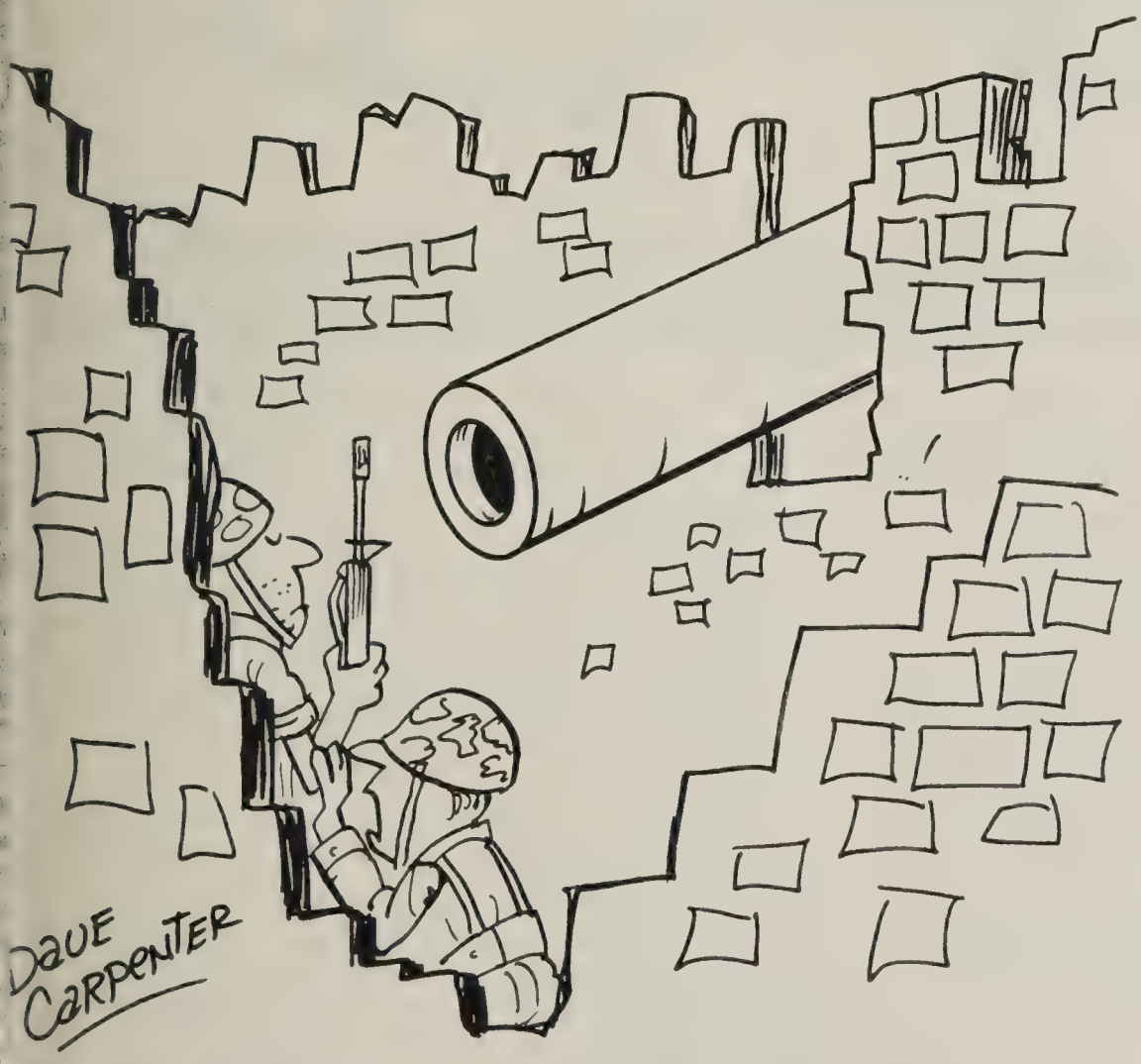
Finally, moving down to a platoon gives a colonel the opportunity to judge the effectiveness of his staff during his absence. He is thus able to identify those officers who excel. How will the deputy commander perform? Will the word from higher headquarters actually filter down to the troops at the platoon level? Is the staff responsive to the needs of the troops who are fighting? Perhaps the operations and training officer should also be moved to the platoon so that he has a chance to better understand the platoon leader's perspective on the difficulties of moving units, problems of security, and the variables of the time element, morale, weather and the availability of adequate support.

Some critics may argue that it is too expensive and unrealistic to expect colonels to go back to being platoon leaders, but if Ft. Benning, Ga., agrees that the heartbeat of the Army is the infantryman, which translates to the platoon leader in the officer corps, then the rifle squad and platoon must be the most important cog in the modern-day Army. If this is the case, then higher ranking officials must pay more attention to platoon issues and problems.

This is not to suggest, by any means, that the majority of a colonel's time should be spent directly with platoons. A colonel's expertise needs to be rightfully dedicated to planning and commanding at higher headquarters. The colonel, however, could reap enormous benefits by operating at the platoon level temporarily.

Incorporating time on training schedules to allow colonels to have an opportunity to command platoons at the grassroots level for at least one week during the year should be considered high-priority. This approach, in the long run, will place most of the emphasis on leadership rather than management. The Army simply cannot afford to do less if it espouses a policy that the rifle platoon is the cornerstone for successful mission accomplishment.

MAJ. ROBERT W. DUFFNER, USAR□



"Wake up, sir. It appears that the enemy advanced their artillery during the night."

MAJ. MICHAEL L. McGEE serves as chief of the leadership branch, Office of the Deputy Chief of Staff for Personnel at Headquarters, Forces Command.

MAJ. ROBERT W. DUFFNER, U.S. Army Reserve, is assigned to the 4153rd U.S. Army Reserve School, Albuquerque, N.M., and, as a civilian, is an historian for the Air Force Weapons Laboratory History Office, Kirtland Air Force Base, N.M. He served as a rifle platoon leader and company commander with the 101st Airborne Division in Vietnam.



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ate Drinking Laws Apply on Post

Effective this month, soldiers drinking alcoholic beverages facilities on U.S. military installations must comply with ppropriate state drinking laws.

n the past, soldiers drinking on U.S. posts were required adhere to state laws pertaining to distilled spirits, but could nk beer or wine at age 18 at the post commander's discre-a. Soldiers stationed overseas will continue to abide by the s of the locale where they are serving, which are generally re permissive than in the United States.

The new decision, which affects all service members sta-ned in the United States, was made by Secretary of Defense spar W. Weinberger following pressure from the Adminis-ion as part of its push to make 21 the national drinking .

ast summer, in response to public outcry over the high nber of traffic deaths caused by young drivers who had n drinking, Congress passed and President Reagan signed law a bill authorizing the federal government to withhold

The Bulletin Board

nway funds from states which did not establish a minimum l drinking age of 21.

n response to that legislation, six states—Georgia, Massa-setts, Mississippi, New Hampshire, North Carolina and ginia—have raised their minimum drinking ages to 21, ing a total of 29 states now in compliance with the bill. he 21 states and the District of Columbia which continue llow drinking below the age of 21, six states restrict the hase of alcohol to either beer or wine.

ality of Life' Survey

he Department of Defense (DoD) is conducting a survey ne spouses of military personnel to determine how success-ts "quality of life" and family programs are. DoD cur-ly spends about $10 billion on such programs.

ne survey is being sent to the spouses of soldiers, sailors, en and Marines worldwide to get their opinions on topics ding relocation, quality and availability of family support ces, family separation, employment of spouses, medical dental care, and the degree of satisfaction with family life in the military.

his is the first survey of spouses ever conducted by DoD; nse officials say it is an indication of the significance ac-ed military family life, which is viewed as a key factor ne retention and readiness of service members today.

vivor Benefits Review

e Department of Defense is reexamining the Survivor fit Plan (SBP) to determine if improvements can be made h would increase participation in the program.

cal 1985 estimates indicate that only 55 percent of retired ary members now take part in the program, including 45 nt of enlisted retirees and 75 percent of retired officers. 's goal is a 75-percent overall rate of participation.

der the SBP, survivors of retired service members contin-receive a portion of the deceased's retired pay. The bene-ficiary, normally the member's spouse, is entitled to up to 55 percent of the retiree's pension payment under the program. The monthly cost to the service member is $7.50 for the first $300 of retired pay and ten percent of the amount in excess of $300.

As part of its review, DoD is considering changes proposed by its Fifth Quadrennial Review of Military Compensation to improve the cost formula for retired pay, stabilize the impact of Social Security offsets and develop better methods for informing career military members about the SBP. In addition, DoD is studying the cost of participation in the program, government subsidy rates, methods for ending coverage once enrolled and combined coverage of former spouses and children.

Short-term Tour Extensions

Army Reserve officers completing their initial active-duty obligation no longer need to request short-term extensions to complete a full overseas tour.

In the past, Reserve officers often did not have enough remaining time in service to complete a full overseas tour following attendance at basic and qualification courses. Now those officers may fill out an overseas tour extension statement, DA Form 5121-R, and their extensions will be automatically approved.

New Officer Preference Statement

Army officers have a new computerized preference statement which will "help career managers respond to an officer's desires more quickly than was possible with the old form," according to personnel officials.

The new preference statement, an updated version of DA Form 483, includes information on preferred area of specialization, length of tour, overseas versus continental U.S. duty, three duty location preferences and special family considerations which might affect choice of assignment.

The preference statement should be submitted to the Army's Military Personnel Center at any of the following times:

- About 12 months before completing an overseas tour.
- About 12 months after reporting to a continental U.S. assignment.
- Within 60 days after starting a class at a continental U.S. service school, a civilian institution or training with industry.
- Whenever an officer's personal preferences change.

Officers may contact their local military personnel offices to obtain the forms.

More Time to Raise GT Scores

The Army has extended the date after which midterm soldiers with low general test (GT) scores will be barred from reenlistment to at least 31 October. Second- and third-term soldiers with GT scores below 90 were to be barred from reenlistment this spring, but the grace period under which they could try to raise their scores was delayed, pending further study of the policy.

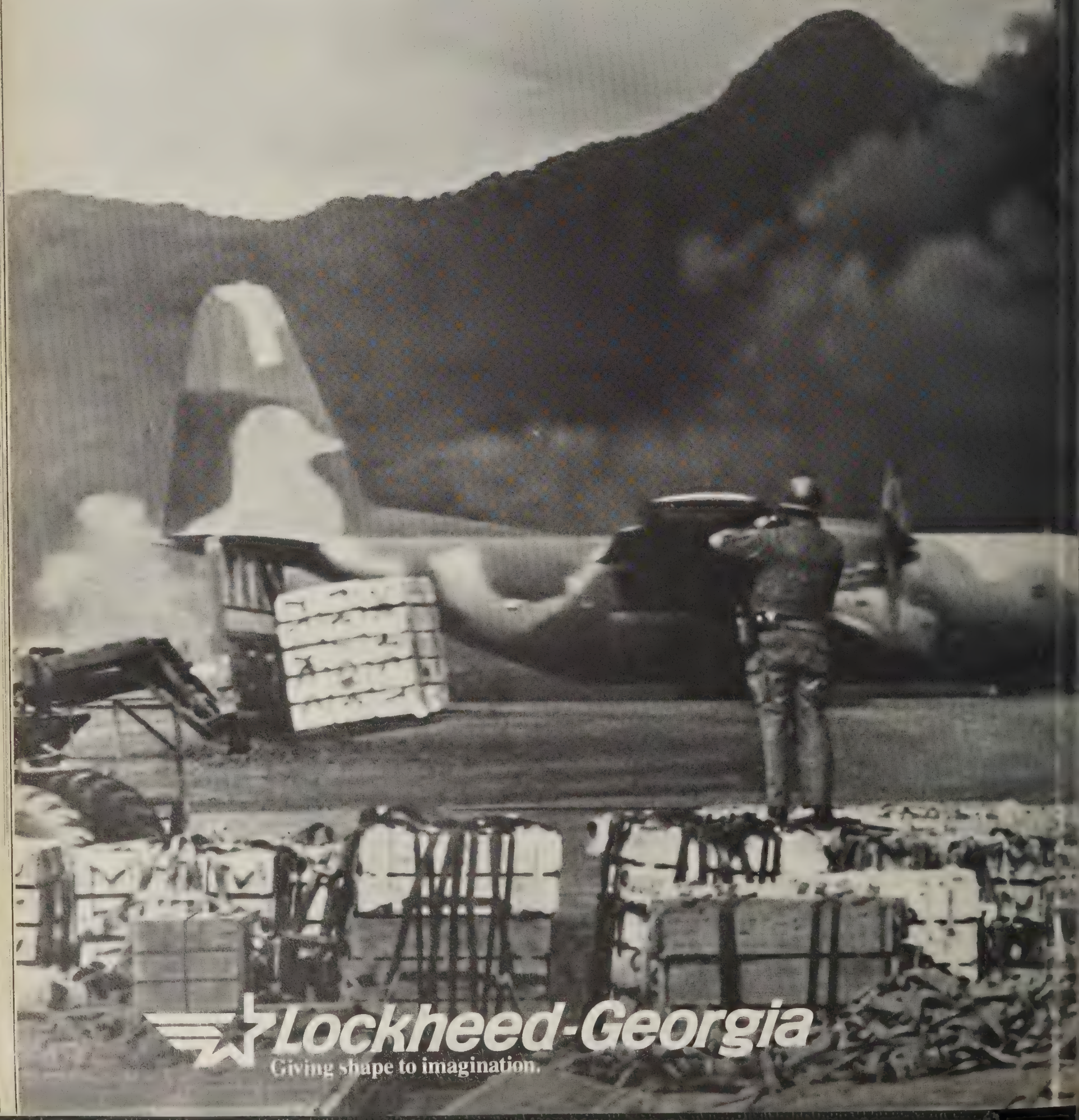
The purpose of the policy was to encourage soldiers, especially in the grades E4 through E6, to improve their educations as much as possible, according to an Army spokesman. In the past, those soldiers who wanted to reenlist but had low scores were allowed to extend their tours so that they could prepare for another chance at the test. Upon taking another look at the policy, Army planners thought that it might be too arbitrary and could cost the service some good soldiers.

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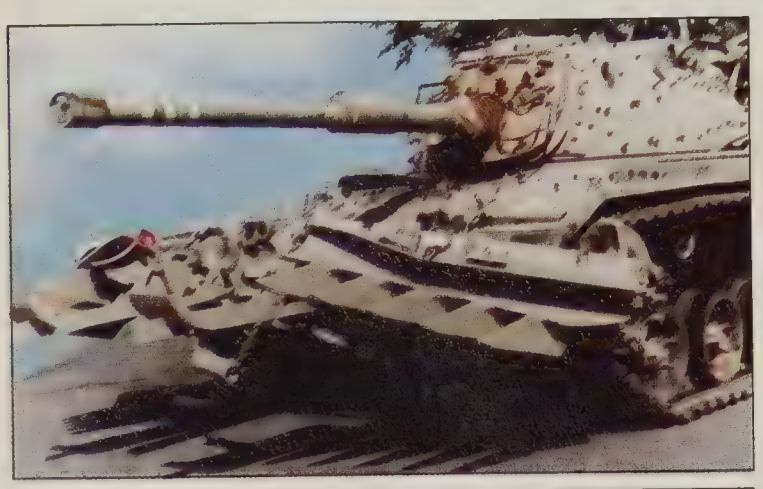
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'amily Action Plan Emphasizes lousing, Movement, Job Issues

Army "Family Action Plan II" (FAP like its 1984 predecessor, proposes a iety of policy and program changes ecting soldiers' pocketbooks and living ditions. The 67 issues recommended action cover such topics as availabil- of family quarters, spouse employ- nt assistance, relocation and mobiliza-

News Call

concerns, access to community sup- t facilities, medical care improvements compensation-related items.

he first FAP was intended to realize philosophy expressed in the Decem- 1983 Army "Family White Paper." II is a natural consequence of the ny's continued long-range interest in ressing all of the needs of its soldiers, sidered vital to troop morale, reten- and readiness.

the area of family housing, the Ar- has two goals: overall expansion of ilable quarters and compensation for den expenses." Under FAP II, the Ar- seeks to provide more on-post family housing for full-time National Guard and Reserve soldiers stationed in expensive or isolated communities.

The Army's Community and Family Support Center has initiated a program to develop commercial "brand name" hotels on Army installations using nonappropriated funds. The 120- to 200-room hotels will supplement Army guest houses and ease the shortage of transient quarters for those making permanent moves.

To assist soldiers with the hidden costs of home ownership and rental, the Army has proposed compensation for expenses incurred in house hunting and in home buying and selling, while recommending arrangements whereby junior enlisted members may have the costly security deposit fee waived when renting apartments. FAP II also seeks increases in the variable housing allowance (VHA) for personnel assigned to high-cost areas.

FAP II addresses several family concerns relating to relocation, mobilization and separation. Army personnel officials have been asked to examine three issues affecting first-term married soldiers in the lower enlisted grades: the possibility of eliminating unaccompanied short tours during the first year of marriage, increases in household goods weight allowances for first-term soldiers (addressed in the proposed fiscal 1986 budget) and funding of transportation of first-term families to the soldier's duty station.

Concerning mobilization, FAP II has ordered the Army's Civilian Personnel Office to develop a handbook to assist families of civilian employees whose jobs may require them to remain overseas during hostilities. The National Guard Bureau (NGB) and the Office of the Chief, Army Reserve (OCAR), are to complete plans to support reserve components families upon mobilization.

When reserve members are to be assigned within the continental United States during mobilization, FAP II has asked the NGB and the OCAR to review the policy restricting family member travel and movement of household goods upon initial deployment.

Two situations in which service members fail to support their families involve separation: soldiers on unaccompanied overseas tours and those who are absent without leave or confined due to misconduct. In such cases, the member's family is often without financial support and unable to receive military entitlements. Under these circumstances, FAP II has recommended support be provided the families in the form of housing and travel allowances.

In an effort to help soldiers' spouses find jobs following reassignment, the Ar-



ıe much-modified engine cowling of this UH–1B 'Huey' helicopter marks it as a test bed for one of three turbine engines under ımpetitive development for the Army's LHX (light helicopter, experimental) program, in this case the ATE109 by the Light Helicopter ırbine Engine Co., a joint venture of the Allison Gas Turbine Division of General Motors Corp. and the Garrett Turbine Engine Co. the Garrett Corp. General Electric Company and a consortium of Avco–Lycoming and Pratt & Whitney are also developing candidates r the T800-XX-800 engine requirement. Two of the 1,200-shaft horsepower-class T800 engines are contemplated for the LHX, which to be produced in scout-attack and utility versions, beginning in the early 1990s. The Allison–Garrett ATE109 has achieved 1,200 aft horsepower in tests. The Army plans to produce nearly 5,000 of the rotorcraft under the LHX program.

my has established the Employment Information and Referral Service. This initiative, begun at the prompting of the first FAP, is receiving continued emphasis under FAP II. One-stop employment information centers have been set up at a limited number of posts as Civilian Personnel Center officials review the effectiveness of these facilities.

The Army's interest in getting family members involved with the post community is reflected by FAP II recommendations in support of volunteer programs. The Army's Community and Family Support Center is studying the feasibility of establishing a volunteer bank to identify and develop meaningful volunteer opportunities, train supervisors of volunteers and evaluate specific volunteer programs.

To ease the financial burden of lower-ranking enlisted soldiers, FAP II proposes eliminating the dining facility surcharge applied to family members of E4s and below.

The plan also calls for a review of the criteria for receiving federal food stamp which now tend to favor families livin on post over those receiving housing a lowances.

The plan recommends three initiativ which would significantly expand acce to community support facilities. The include: opening up morale support a tivity facilities to reserve componen and Army civilian dependents, allowin Reserve and Guard family members carry and use their own identificatio cards, and making child care centers mo

GENERAL OFFICER CHANGES



Lt. Gen. R.W. RisCassi from CG, 9th Inf. Div., to DCG, TRADOC/CG, USACAC&FL.



Lt. Gen. C.E. Saint from CG, 1st Armd. Div., to CG, III Corps & FH.



Lt. Gen. C.E. Vuono from DCG, TRADOC/CG, USACAC& FL, to DCSOPS.



Maj. Gen. J.O. Bradshaw from CG, USAREC, to ADCSOPS (JA)/DSPP, ODCSOPS.



Maj. Gen. W.F. Burns from DComdt, USAWC, to JCSRIRNF, OJCS.



Maj. Gen. A.L. Cooley Jr. from ADCSOPS(JA)/DSPP, ODCSOPS, to CG, 24th Inf. Div. (Mech).



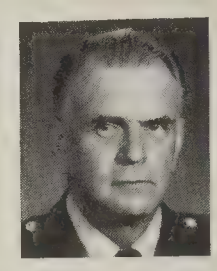
Maj. Gen. M.O. Edmonds from DCST, TRADOC, to CG, USASSC.



Maj. Gen. J.B. Farris Jr. from DCG, XVIII Abn. Corps, to ACS, C3/J3, UNC/CFC/USFK/ Eighth USA.



Maj. Gen. W.E. Klein from VD, J5, OJCS, to DO, J3, USREDCOM.



Maj. Gen. E.S. Korpal from DIG (IATIM), to CG, USAFACFS/ Comdt, USAFAS.



Maj. Gen. K.C. Leuer from ACS, C3/J3, UNC/CFC/ USFK/Eighth USA, to CG, 5th Inf. Div. (Mech).



Maj. Gen. R.G. Lynn from DDC3S, OJCS, to DC3Sys, PACOM.



Maj. Gen. J.H.V. McCrea Jr. from DCG, 32nd AADCOM, DWG, to DCSPAL, TRADOC.



Maj. Gen. A.K. Ono from DCSPAL, TRADOC, to CG, USAREC.



Maj. Gen. D.R. Palmer from DComdt, USACGSC, to CG, 1st Armd. Div.



Maj. Gen. B.B. Porter from DMPM, ODCSPER, to CG, 82nd Abn. Div.



Maj. Gen. J.D. Smith from ADCST, TRADOC, to VD, J3, OJCS.

Brigadier Generals: **B.F. Brashears** from DDP, J5, PACOM, to ADCST, TRADOC; **W.M. Burleson Jr.** from DCG–East, USAREC, to ADC, 2nd Armd. Div.; **J.H. Corns** from ADC, 7th Inf. Div., to DCST, TRADOC; **J.W. Crysel** from ADC, 101st Abn. Div. (A/A), to DDP, J5, PACOM; **Johnie Forte Jr.** from ADC, 8th Inf. Div. (Mech), to DCG, 32nd AADCOM, DWG; **F.M. Franks Jr.** from CG, Seventh USA Tng. Cmd./ADCSOPS, to DComdt, USACGSC; **W.M. Lehardy** from D–OPMSSG, ODCSPER, to ADC, 4th Inf. Div. (Mech); **P.H. Mallory** from ADC, 2nd Armd. Div., to CG, Seventh USA Tng. Cmd./ADCSOPS; **M.J. Pepe** from DCG–P&R, AVSCOM, to DCSP&P, AMC; **W.A. Roosma** from DJS, AFIC, to ADC, 7th Inf. Div.; **H.M. Wassom** from D–JCG, ESS, USAC, to ADC, 101st Abn. Div. (A/A).

■ ***USACAC&FL**—U.S. Army Combined Arms Center and Ft. Leavenworth; **FH**—Ft. Hood; **(JA)/DSPP**—(Joint Affairs)/Director of Strategic Plans and Policies; **RIRNF**—Representative for Intermediate-Range Nuclear Forces; **DCST**—Deputy Chief of Staff for Training; **USASSC**—U.S. Army Soldier Support Center; **UNC/CFC/USFK**—United Nations Command/Combined Forces Command/U.S. Forces, Korea; **VD**—Vice Director; **DO**—Director of Operations; **DIG(IATIM)**—Deputy to the Inspector General (Investigations, Assistance, Training and Information Management); **USAFACFS**—U.S. Army Field Artillery Center and Ft. Sill; **DDDC3S**—Deputy Director for Defensewide C3 Support; **DC3Sys**—Director, C3 Systems; **AADCOM, DWG**—Army Air Defense Command, Darmstadt, West Ger.; **DCSPAL**—Deputy Chief of Staff for Personnel, Administration and Logistics; **DMPM**—Director of Military Personnel Management; **DDP**—Deputy Director for Plans; **D–OPMSSG**—Director, Officer Personnel Management System Study Group; **DCG–P&R**—Deputy Commanding General for Procurement and Readiness; **AVSCOM**—Army Aviation Systems Command; **DCSP&P**—Deputy Chief of Staff for Procurement and Production; **DJS–AFIC**—Director of Joint Staff, Armed Forces Inaugural Committee; **D–JCG, ESS, USAC**—Director, Joint Control Group, Exercise Solid Shield, U.S. Atlantic Command.*

cessible to civilian members of the com-
unity. Among several changes proposed
the area of health care, the plan seeks
phasing out of the use of contract phy-
ians because of the perception that
ey take less of a personal interest in the
tients than do Army Medical Corps-
ained doctors. At the same time, FAP
urges making up the shortage of Army
ctors, which now causes delays in ser-
e.

The plan also cites the need for reim-
rsing Army civilian employees over-
is for the high cost of medical care in
eign countries, reimbursing family
mbers stationed in remote areas who
st travel long distances to get proper
atment and allowing reserve compo-
nts families to use public hospitals dur-
; mobilizations.

p Drill Sergeants Selected. The ac-
e-duty and reserve components win-
s of the 1985 Drill Sergeant of the
ar competition are SFC Mark S. Ripka
m Ft. Benning, Ga., and SFC Frank
nnarelli of the 78th Division (Train-
), Edison, N.J. The competition and
ards presentation took place at the Ft.
nroe, Va., headquarters of the Ar-
's Training and Doctrine Command
RADOC).

he two winners were among 25 can-
ates who had won regional competi-
ns at active and reserve sites through-
the United States and in Puerto Rico.
in the past, Sergeants Ripka and Gen-
elli were presented the Stephen Ailes
l Ralph E. Haines Jr. awards, respec-
ly, as well as the Meritorious Service
dal.

FC Ripka is a native of Springfield,
and SFC Gennarelli is from Cliffside,
. In civilian life, SFC Gennarelli works
a refrigeration operating engineer in
v York City.

oth NCOs will return to their assigned posts to serve as advisers on initial entry training policy and act as liaison between TRADOC and drill sergeants in the field.

New Reserve Personnel System. The Standard Installation/Division Personnel System, U.S. Army Reserve (SIDPERS-USAR), has been deployed to reserve units and their supporting headquarters worldwide, bringing the Army Reserve's personnel system in line with the automation capabilities of the regular Army, which began using a form of SIDPERS several years ago.

SIDPERS-USAR will significantly increase automated support to reserve personnel managers by providing commanders and their staffs with the standard information they need to keep track of and control their personnel resources. The information provided is also used by the Department of the Army and major commands for planning, budgeting, recruiting, training and career management.

SIDPERS-USAR obtains information from other automated systems and incorporates all of the data into a single source, thereby reducing the amount of information which must be fed into the system. It provides improved accuracy and use of the information through on-line data entry and display, and speeds up the transmittal of the information by sending it over telephone circuits.

The Reserve SIDPERS has a central computer site in St. Louis, Mo., and regional computer sites at each of the five continental numbered army headquarters, which support the major U.S. Reserve commands and overseas headquarters.

Army Developing Hearing Aid. Researchers at Walter Reed Army Medical Center's (WRAMC's) audiology and speech department are working to produce a "thinking" hearing device that could process sounds for its user.



Close-up of the AN/PPN19, the portable radar transponder developed by Motorola's Government Electronics Group for Special Forces units under an Army contract. The aircraft beacon of the lightweight (17-lb.) unit is used in close air support, naval bombardment, air interdiction, parachute drops and supply delivery.

At present, hearing aids can only amplify sounds, while a considerable amount of hearing impairment is attributable to the listener's inability to distinguish between certain sounds and high frequencies. The researchers at WRAMC, in Washington, D.C., are trying to develop a hearing device that will clarify such sounds.

"The device would pre-process information to think for the person," said a WRAMC official. "It has to receive speech, then modify certain parts to make it more intelligible. It has to compensate for irreversible nerve damage."

Once perfected, the hearing aid would be able to break down each word received and transmit the consonants, which are the most difficult to differentiate, more slowly and with greater intensity.



he Army's top drill sergeants of the year for 1985 receive Meritorious Service Medals from Lt. Gen. Charles W. Bagnal, deputy commanding eneral for training of the Training and Doctrine Command: SFC Mark S. Ripka (above, left) *and SFC Frank Gennarelli* (above, right).



The Standard Tactical Vehicle with Trailing Arm Drive™

High-speed, all-terrain combat mobility with our revolutionary multi-role vehicle.



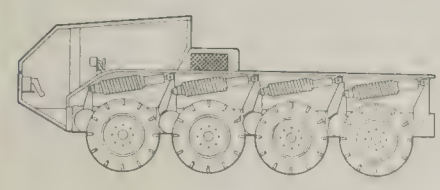
· Standard Tactical Vehicle (STV) represents a family of versatile
i-role tactical vehicles built around our revolutionary 8W12 Trailing
Drive (TAD) Undercarriage concept. The STV is now performing a
range of combat missions in an almost endless number of vehicle
igurations: from the U.S. Army's Vulcan Wheeled Carrier (VWC),
ansport vehicles, to radar systems, to mobile rocket and missile
:ms, and more.

The key to the STV's superior all-terrain capability is Standard
ufacturing Company's unique Trailing Arm Drive (TAD) Under-
age. The TAD design features an 8-wheel independent suspension
m coupled with hydrostatic trailing arm drive and braking.

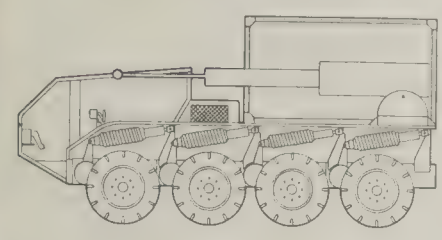
Our TAD design puts hydraulic cylinders and a trailing arm at each
el's spring shock mechanism. A single, direct cylinder control allows
perator to raise or lower any wheel, or any combination of side or
wheels independently from others. The overall vehicle profile can
ised or lowered by 12", allowing for ease of air transportability and
ich reduced silhouette when emplaced.

The trailing arms to each wheel are jointly driven from a gearbox
non to each side which provides optimum torque to each wheel at
erating speeds. This *all wheel drive* means continuous *all wheel*
r. While conventional vehicles are shifting gears, or locking out the
ential, or switching to 4-wheel drive, the STV with Standard's TAD
gear and on the run.

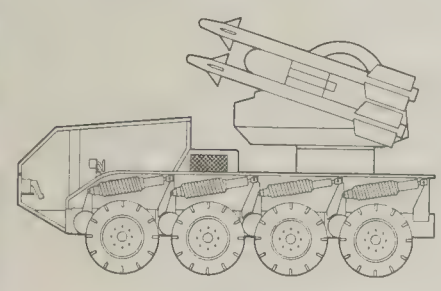
Existing applications of the Standard Tactical Vehicle currently under development or in production.



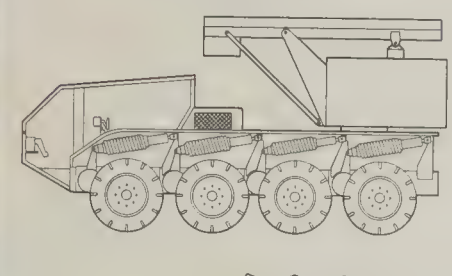
8W12 Standard Tactical Vehicle (STV)



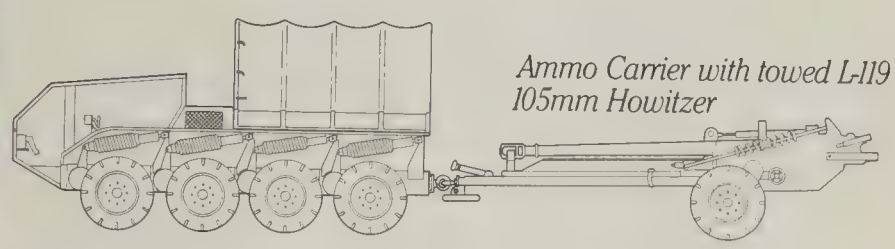
C³I Vehicle



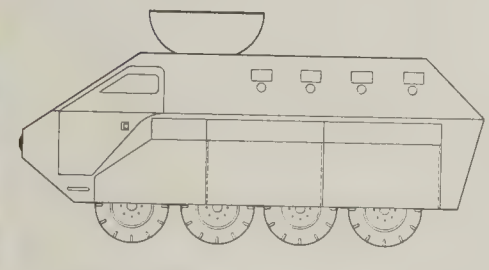
Rocket/Missile Carrier



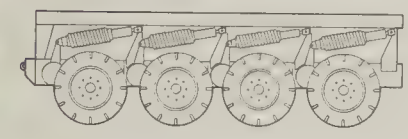
Firefinder Radar



Ammo Carrier with towed L-119 105mm Howitzer



M-30 Mortar Carrier



Robotic Transport Platform

And being in gear and on the run is where Standard's STV is at its best: traveling at speeds up to 45 M.P.H. over battlefield terrain that could stop a conventional vehicle in its tracks. It can negotiate side slopes and inclines of 60% and greater, depending on available traction. With the front and rear end wheels raised to shorten the wheelbase, it can make 360° turns twice as fast as most other vehicles. And it can negotiate vertical step obstacles up to 24" high.

With all this, Standard's STV provides an important extra—a better, smoother ride. This results in greater crew comfort and a significant reduction in equipment and vehicle damage due to excessive shock and G-loading associated with rough terrain operation.

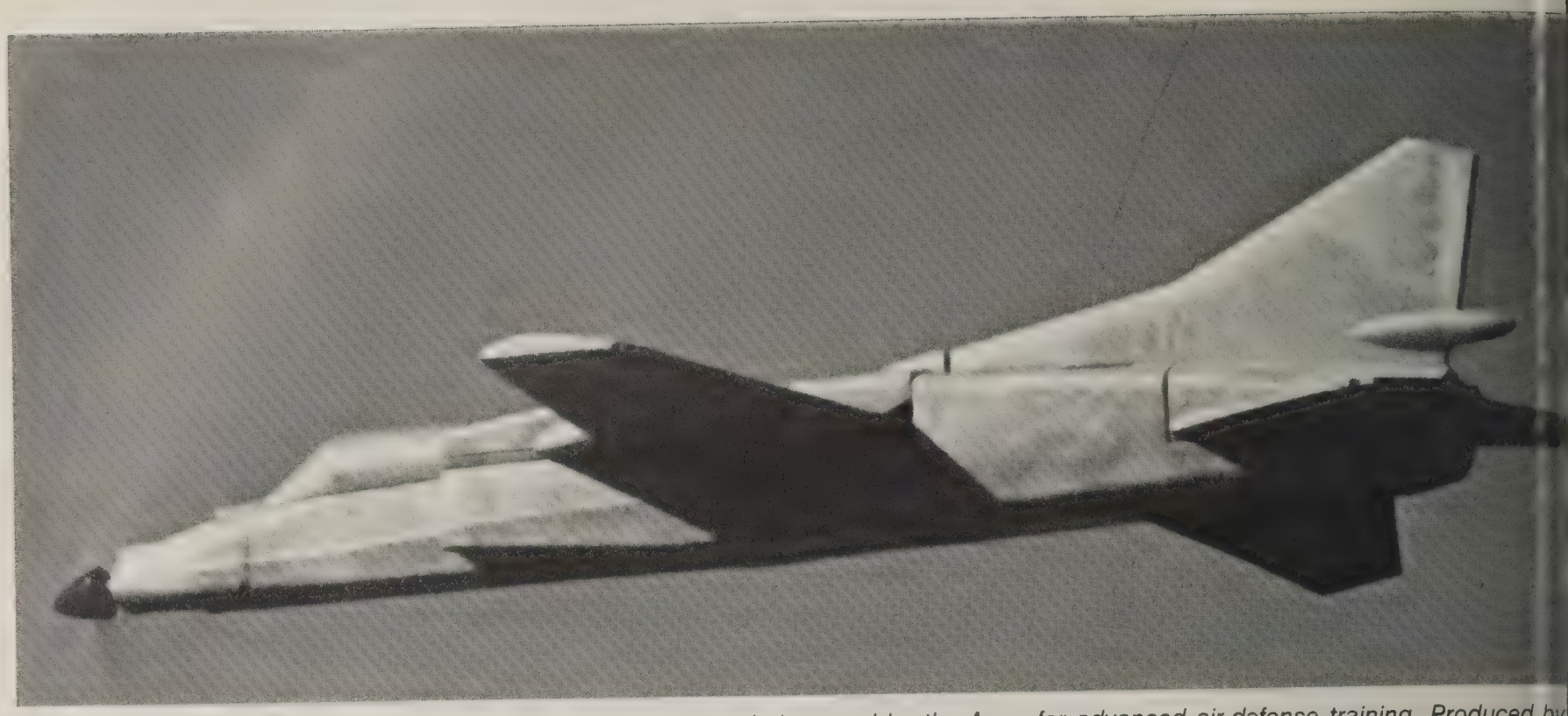
Standard is currently building the Standard Tactical Vehicle, with Trailing Arm Drive, for the Vulcan Gun System and other applications under contract for the U.S. Army. TAD vehicles are available in sizes ranging up to 100,000 pound GVW. Let us show you how this highly versatile vehicle can meet your requirments for a high-speed, all-terrain tactical support system.

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This expendable aerial target drone, the FQM–117B, is now being used by the Army for advanced air-defense training. Produced by RS Systems, Beltsville, Md., the FQM–117B is a one-ninth scale model of the Soviet MiG–27 (Flogger–D) and is capable of presenting realistic attack flight profiles to Army units equipped with small arms, 20-mm and 40-mm air-defense gun systems, and missiles such as the Red–Eye, Stinger and Chaparral. More than 10,000 of the remotely piloted targets are committed to production.

During the next two years the researchers hope to have the concept perfected and the desired components miniaturized onto a computer chip small enough to fit into a conventional hearing aid case.

C–17 Program Gets Under Way. In an effort to strengthen the military's long-range airlift capabilities, Secretary of Defense Caspar W. Weinberger has approved full-scale development of the Air Force's C–17 transport aircraft.

Production of the aircraft is deemed essential if the Department of Defense (DoD) is to meet the long-range airlift capacity goal of 66 million ton miles per day adopted by a congressionally mandated mobility study. Current estimates put DoD's long-range airlift capacity at between 50 to 75 percent of the minimum required daily ton mileage.

A decision on C–17 production is expected in fiscal 1988, and if the program goes ahead, the first aircraft would begin operational flying in fiscal 1992.

Following an independent analysis of the C–17 program's costs as directed by Congress, Mr. Weinberger called for an additional comprehensive reexamination of the program's forecast production costs by the Air Force, which is to be reviewed by a cost analysis group from the secretary's office by 1 July.

Operational Tests for DIVAD. The Army has begun a second series of performance tests on its 40-mm DIVAD (division air defense) antiaircraft gun in compliance with a DoD mandate following severe congressional criticism of the weapon system's reliability.

Deployment of the DIVAD, officially named the Sergeant York, was to begin this year, but DoD told the manufacturer, Ford Aerospace & Communications Corp., to maintain only minimum production levels pending the outcome of this evaluation.

The test, titled "Follow-on Evaluation I," examines the Sergeant York's operational effectiveness and combat readiness. The maneuver phase is being conducted at Ft. Hunter Liggett, Calif., and the live-fire phase at White Sands Missile Range, N.M.

The maneuver phase involves a series of tactical operations employing M1 Abrams tanks and Bradley infantry fighting vehicles in a combined arms task force against an opposing force. A computer-assisted battlefield instrumentation network records performance data, including response to air attacks and use of electronic countermeasures.

The live-fire tests at White Sands Missile Range are being conducted against drone jet aircraft and helicopters, as well as remotely controlled ground vehicles.

The Army plans to evaluate the results of the test and make a recommendation to the secretary of defense on DIVAD's future by the end of this month.

Chaparral Missile Carrier Upgrade. The Army has awarded the Detroit Diesel Allison (DDA) Division of General Motors Corp. a $29 million contract to build a new automatic transmission for its M730 Chaparral air-defense missile carriers. DDA's X200 transmission will replace the original Allison TX-100-1 power trains.

The X200 transmission permits significantly higher gross vehicle weights with increased engine power and superior f economy, reliability and performance is adaptable to a full range of diesel a rotary engines with up to 300 gross ho power and its features include four f ward speeds, one or two reverse spee and hydrostatic steering and braking

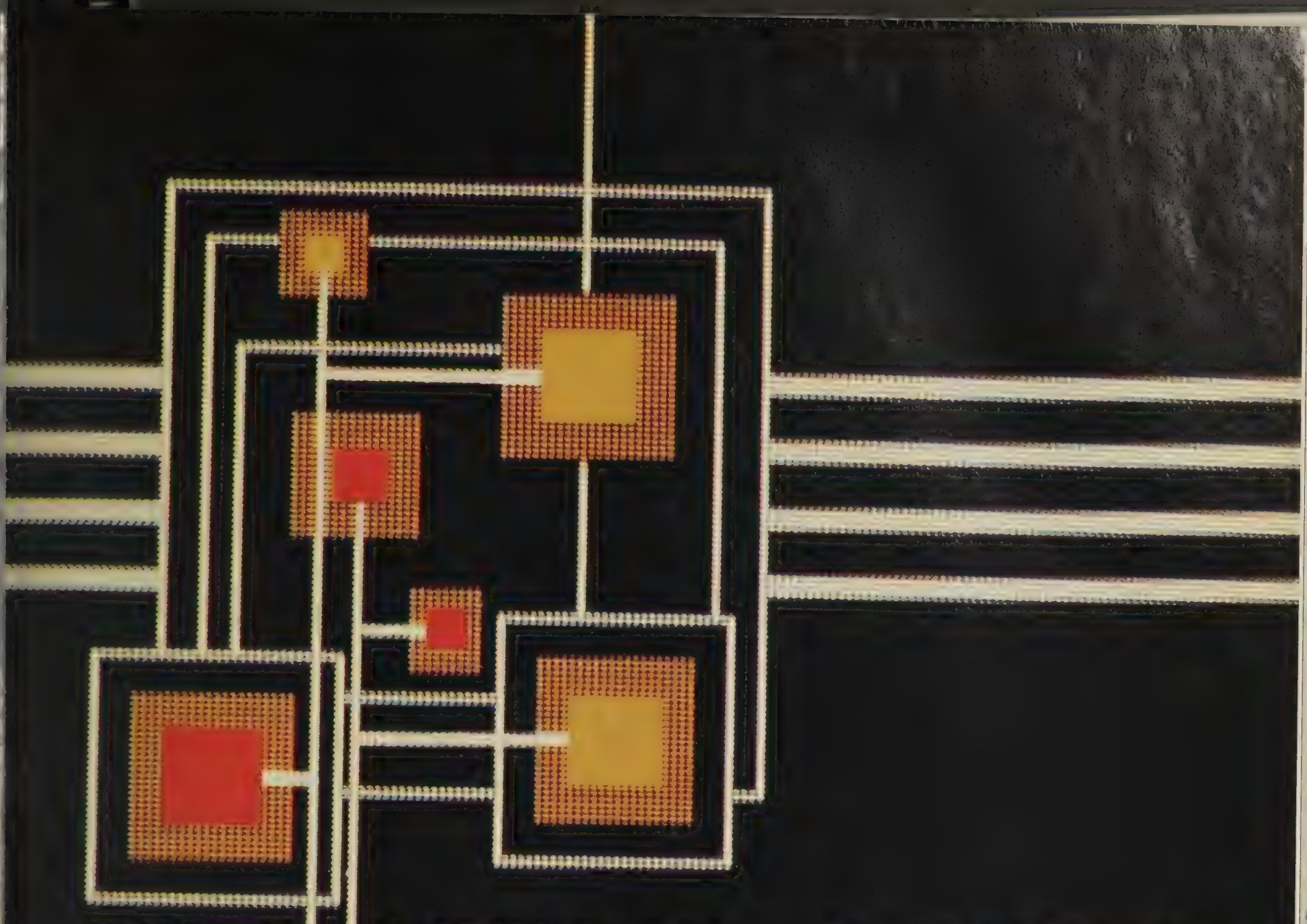
The Chaparral carrier modificati parallel some of those being carried on the Army's large fleet of M113 mored personnel carriers and the m specialized vehicles derived from its ch sis. The M730 is based on the chassi the M548 tracked cargo carrier, itself offshoot of the M113 series.

Chemical Injury Research Lab. Army's Medical Research and Deve ment Command is planning to estab a research laboratory specializing in tr ment of battlefield chemical injuries. 100,000-square-foot facility, to be loc at Aberdeen Proving Ground, Md., be owned and operated by a contrac who will lease five acres of the E wood area of the proving grounds.

The laboratory will conduct resea development and evaluations of antido decontaminants and medical equipm suitable for managing chemical inju on the battlefield.

The facility's operations will be o seen by the Army's Medical Research stitute of Chemical Defense, the Dep ment of Defense's leading laborator researching medical measures to cou chemical warfare.

A contract is expected to be awa in November for about $80 million cluding construction, equipment, per nel and operation. The facility shoul operational by 1989.



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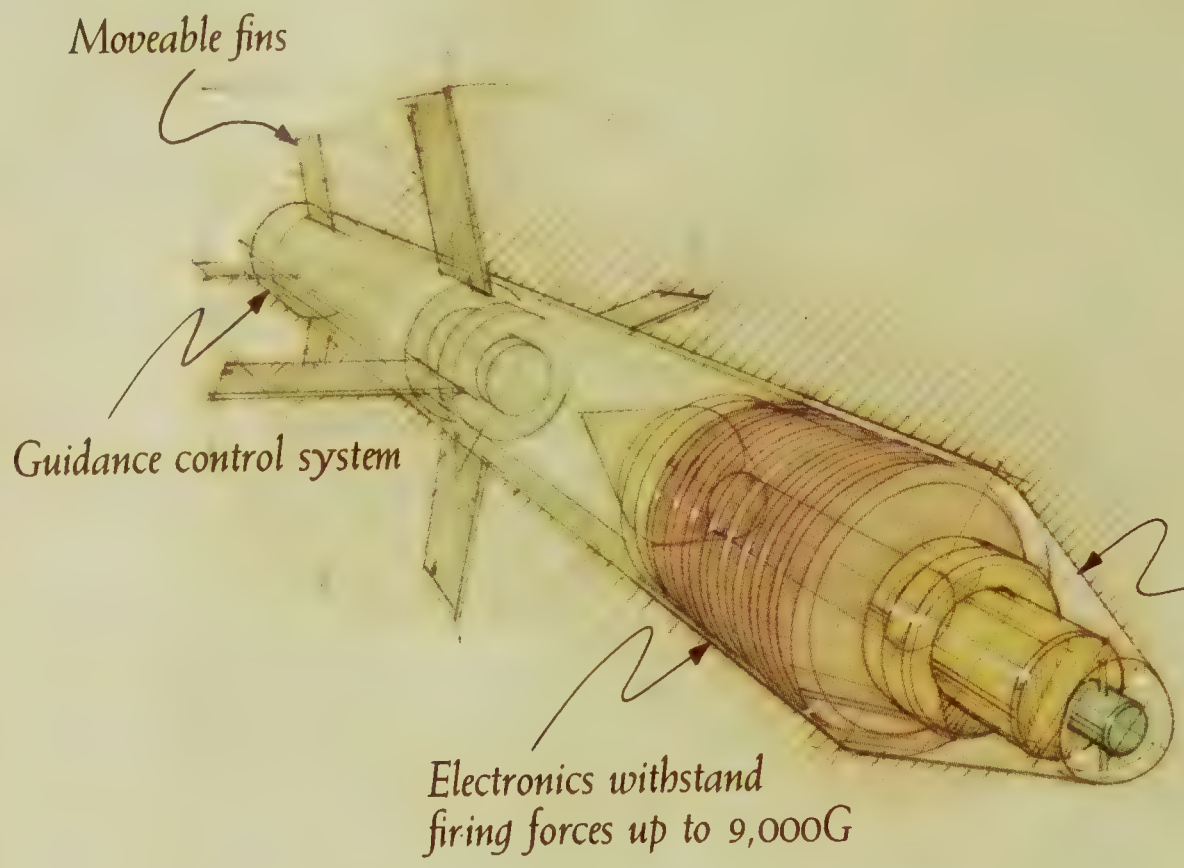
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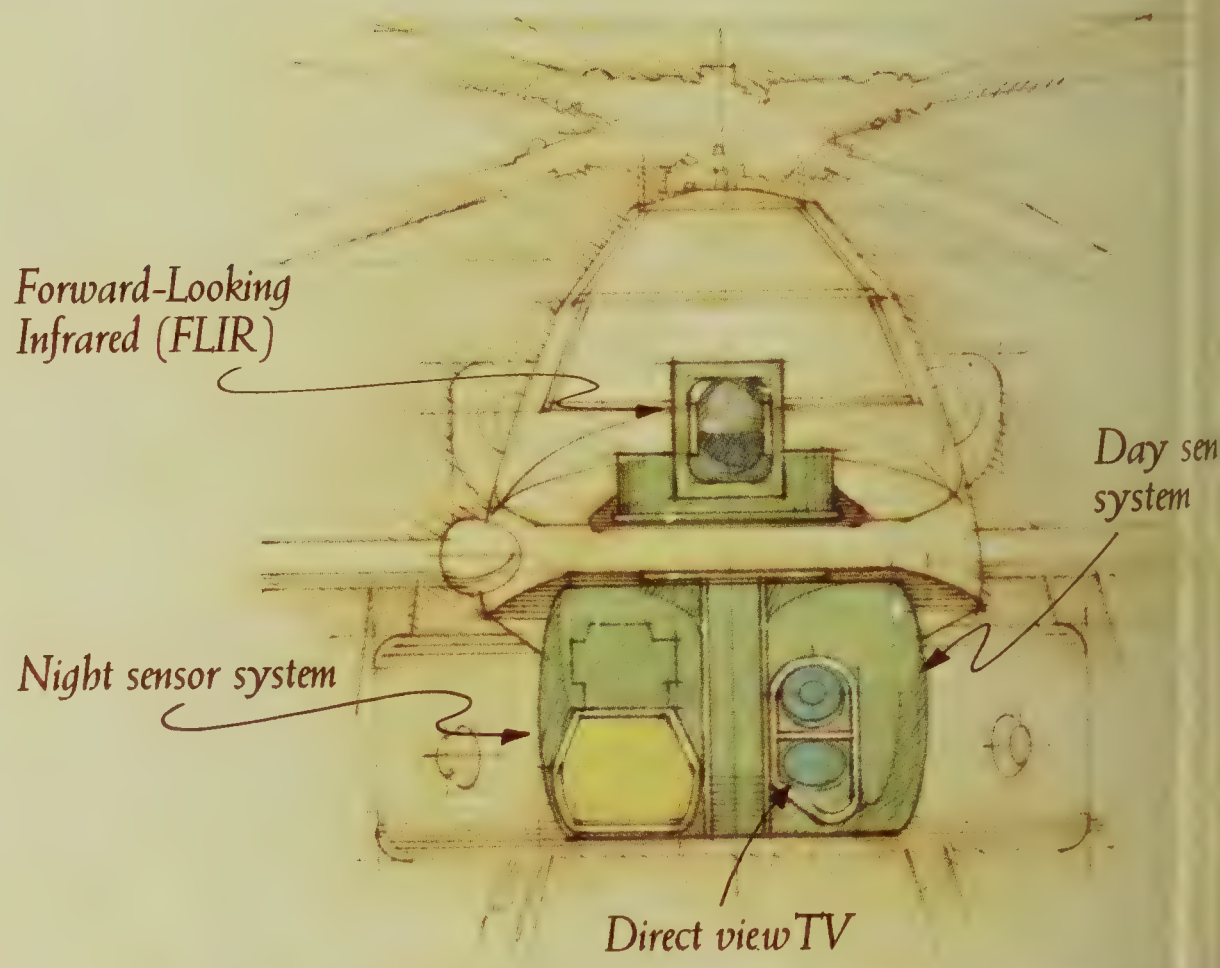


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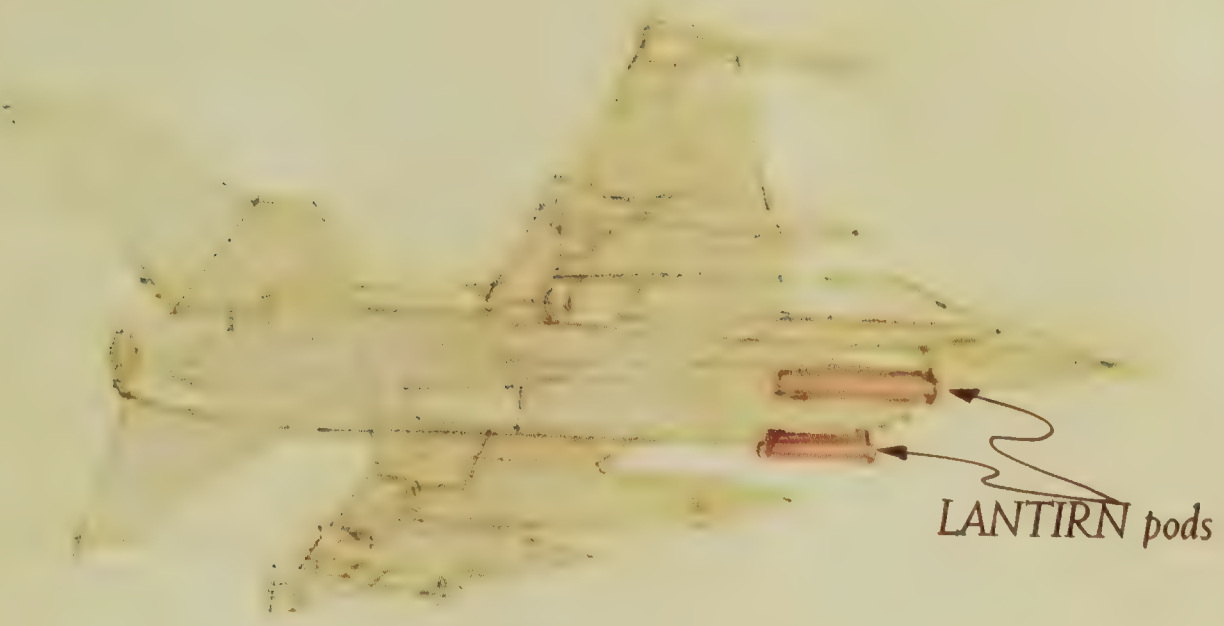
Martin Marietta has pioneered the application of laser, infrared and other electro-optical technologies for navigation and fire control systems like TADS/PNVS. It guides pilots of advanced attack helicopters to targets, day or night, and in adverse weather.

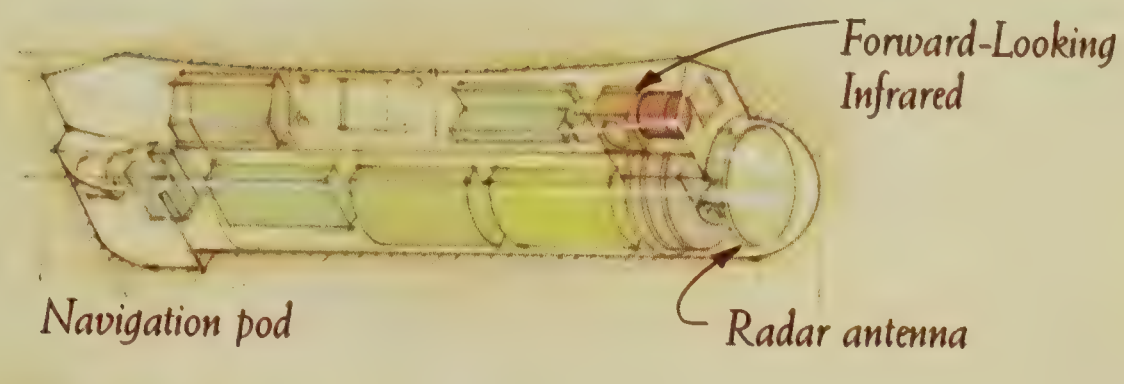


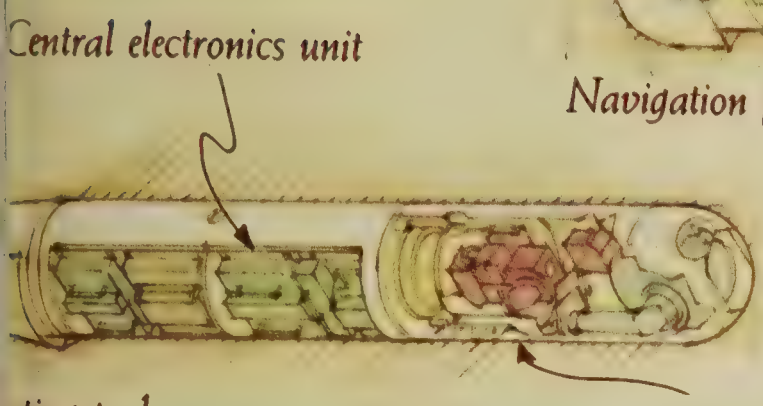
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Faustian Bargain'

uropean Missile Deployments and Arms Control

ear Forces in Europe. *Leon V. Sigal. ie Brookings Institution, 1775 Mas- chusetts Ave., N.W., Washington, .C. 20036. 181 pages; index; $22.95 oth; $8.95 paper.*

By Col. James B. Motley
U.S. Army, retired

December 1979, North Atlantic Treaty rganization (NATO) foreign and de- ministers agreed to deploy new U.S. ear-armed cruise and ballistic mis- in Europe. At the same time, they led to have the United States seek an

Books

control agreement with the Soviet n on these and other nuclear weap-

on V. Sigal, a visiting scholar at The kings Institution and professor of nment at Wesleyan University, Mid- wn, Conn., argues that the decision nuclear deployments to arms con- eemed "a Faustian bargain" to many vers, and no decision in recent years o divided public opinion in Europe strained relations with the Warsaw

e author contends that what began attempt to reassure Western Euro- leaders that the United States was itted to deterring war on the Con- had the effect of engendering deep among Europeans that new deploy- might instead increase the chances clear war. A major theme of author succinct treatment of an exceed- complex decision is that "none of incipal military rationales NATO es publicly for deploying the GL- ground-launched cruise missile] and ng II can stand close scrutiny." adds: "Indeed, the fit between the y requirements of NATO strategy tailed specifications of these weap- loose enough that the existence of ilitary rationale for the NATO de- is open to doubt." He concludes political considerations" were the y reasons behind the missile de- ent decision.

g the December 1979 NATO agree- as a framework for analysis, the , in seven chapters, examines the f NATO's nuclear doctrine and the xes intent in that logic; addresses sequent contradictions in the mili- tionale for the new missile deploy-



Photo: Gary Bloomfield

ments; discusses the political quandary in which NATO now finds itself; explores a way out of that quandary through arms control; and examines the difficulties in NATO's short-range nuclear posture and the possibility for unilateral easing of those difficulties.

Mr. Sigal writes that, with the arrival of GLCMs and Pershing IIs on European shores, "the NATO deployments have set in motion long-delayed Soviet weapons programs, programs that will soon become irreversible." These actions suggest "a fundamental reassessment" of U.S. intent may be under way by Kremlin leaders "that will not be affected by just a softening in American rhetoric."

To avoid further jeopardizing the alliance, the author argues it is in America's interest to try to break the spiraling U.S.-USSR confrontation. He suggests that meaningful progress, however, will take a "dramatic gesture" by the West—a clear and authoritative signal to reassure the Soviet Union and anxious allies that negotiations are not simply a fig leaf for deployments and that NATO is prepared to address Soviet concerns.

The book is a scholarly treatment of a difficult and complex topic. With the growing concern over NATO nuclear doctrine, the changing European nuclear balance, NATO alliance political factors, and the attention that GLCM and Pershing II deployment to Europe is receiving, it is timely, informative and relevant.

The author provides insights into difficult questions that need serious attention and senior-level guidance. As with most major and highly debatable issues of national security, the book will provoke a number of argumentative comments.

COL. JAMES B. MOTLEY, U.S. Army, retired, Ph.D., is a member of the professional staff of the National Institute for Public Policy, Fairfax, Va.

Economic, Social Factors

Impact of War On Our Society

The American Home Front. *Col. James L. Abrahamson. National Defense University Press, Ft. Leslie J. McNair, Washington, D.C. 20319. 228 pages; tables; notes; bibliography; index; $6.*

By Harold D. Langley

Col. James L. Abrahamson wrote this book with two audiences in mind. The first were the civilians and military people involved in contingency planning for future wars. He believes that this group tends to know little about earlier efforts at economic, political and social mobilization. The wartime leaders of the past repeated old errors as a result of a similar lack of information.

The second targeted audience is the college students whose texts and teachers tend to ignore most aspects of military history and war. The author hopes that his work will supplement other course

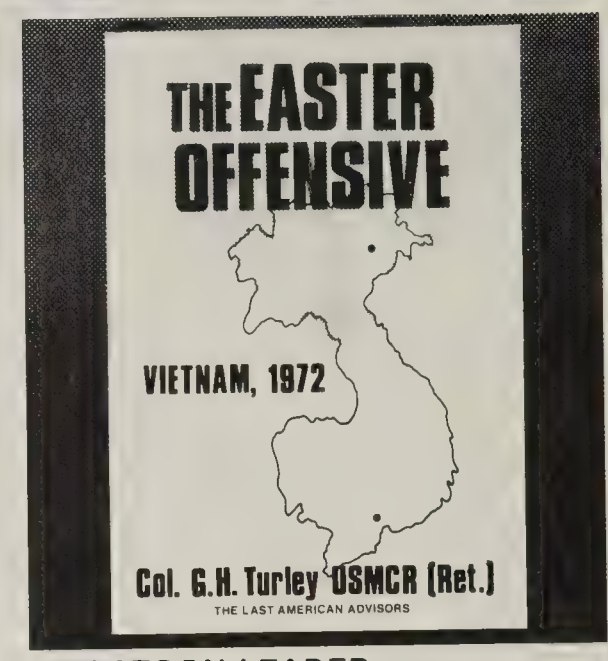
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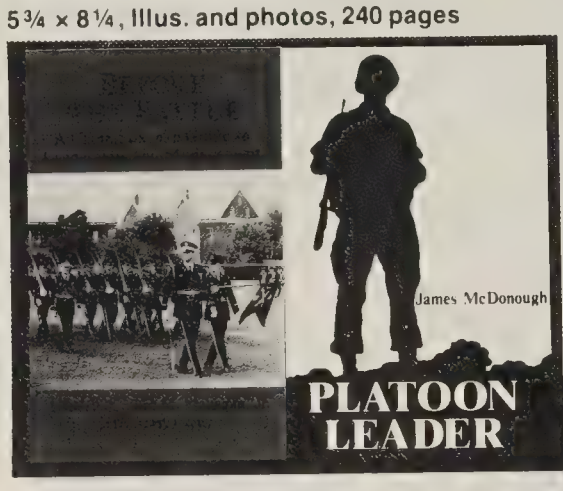
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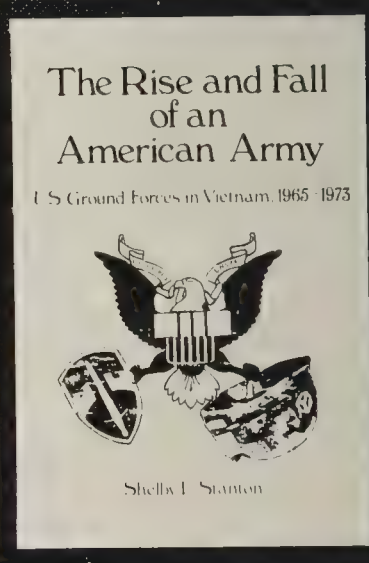
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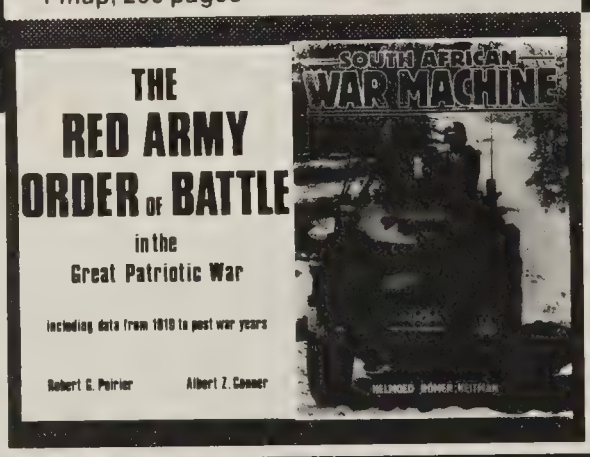


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terials to which they are exposed.
He is no doubt correct in his assumption that to attract either audience he st write something short, handy and essible. To keep the book short, he omitted any consideration of the War 1812, the Mexican, Spanish–American, ean and Vietnam wars. If attractive kaging and a succinct text can induce er audience to exert themselves to n from the past, then Col. Abraham- will have gained a grateful reader-).

he author concludes that war has ulated the economy, promoted in- try and agriculture, increased govern- t controls over American society, ac- rated centralizing tendencies, affected tions between government branches has left an ambiguous record of so- consequences.

Much of the material in the book is of sort found in textbooks on American nomic history, but the author has e beyond earlier treatments to include eat deal of recent scholarship on mil- , economic and social themes. These findings are condensed in short paragraphs and the reader is not asked to grapple with any idea for very long. The result is that all situations tend to be viewed as being about equal in terms of urgency and impact.

This perspective is a disadvantage, especially for the perceived needs of the first audience. Also missing is any discussion of the standby legislation that Congress passed for use in any future declared war, and the unwillingness of business, labor and political leaders to see such legislation invoked.

An academic audience may take exception to the absence of the human dimension in most discussions of the home fronts in various wars. In World War II, for example, we learn about the problems of labor, but there is no mention of the defiance of John L. Lewis or of the reluctance of President Franklin D. Roosevelt to confront him. Missing also is any mention of the use of troops to run the Philadelphia Transit Co. when a dispute over racial matters resulted in a strike.

One might also wonder if a discussion of things that built and maintained civilian morale would not be in order. There is no discussion of the role of music or films, or of bond, paper and scrap drives, or even the contributions of the USO as a link to the men and women in uniform. However, as an up-to-date study that concentrates on economic factors, the book will be very useful.

HAROLD D. LANGLEY, Ph.D., is a curator in the Armed Forces History Division of the Smithsonian Institution's National Museum of American History and an adjunct professor of history at the Catholic University of America, Washington, D.C.

As a service to readers interested in obtaining books reviewed in *ARMY*, the mailing address of the publisher is included in the head notes for each main review and Varied Fare item. Readers are reminded that neither *ARMY* nor AUSA has the facilities to order books for them or to handle the related correspondence; inquiries and orders must be directed to the publisher.

The Editors

Fascinating Book'

ovel As History of Pacific War

s of War. *John Toland. Doubleday id Co., Inc., 245 Park Ave., New ork, N.Y. 10167. 598 pages; maps; urce notes; $17.95.*

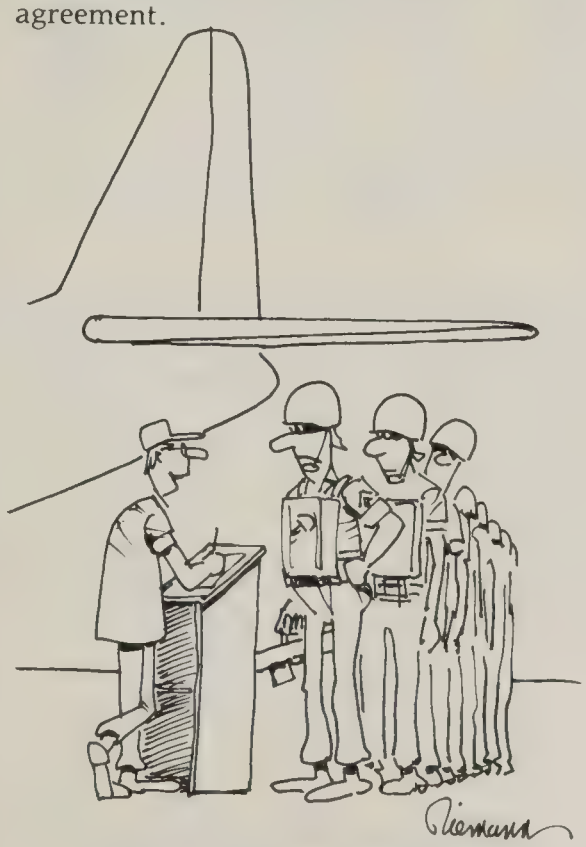
By Col. Stanley L. Falk
U.S. Army Reserve, retired

he name John Toland is familiar to anyone who reads books about World II. Author of three volumes on the in the Pacific—one of which, *The ig Sun*, received the Pulitzer Prize—two on the fighting in Europe, plus graphy of Adolf Hitler, Mr. Toland made his mark as an informative, getic and sometimes controversial ary historian.

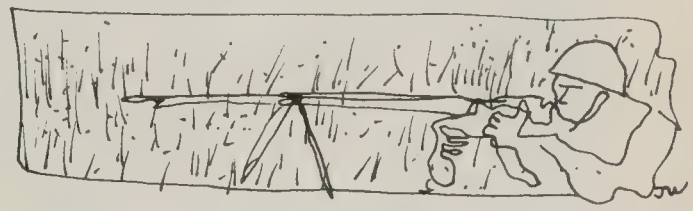
s new book, however, is a novel. years of studying and writing his- he has concluded that "even the scrupulously researched history can nly an approximation of the truth." e has turned to fiction, "the fittest for humanity," to tell a story about acific war that he believes "is as real not more than, formal history."

s account is a tale of two families, American, the other Japanese, linked arriage and friendship, as well as by itter conflict that separates their coun- Like characters in the war novels of an Wouk, members of the two fam- have a knack for turning up most rtunely to participate in crucial battles and other important occurrences.

The reader thus gets an overall picture of events as exemplified by or seen through the eyes of the novel's protagonists and a great deal of other information about the war, supplied by the author and flavored by his own interpretation of its causes and its course. Some of Mr. Toland's judgments and analyses of history itself may invite question or disagreement.



"Aisle or window seat, sir?"



Essentially, his sympathies lie with the Japanese and their view of the origins, conduct and ending of the war. If this sometimes colors his interpretation, it does not detract from his overall grasp of the nature of the conflict and of its toll.

His most noteworthy contribution is a touching and effective picture of what life was like for millions of Japanese who suffered undeservedly. His harsh descriptions of the fate of civilians exposed to firebombings in the late stages of the war, and of sick and starving soldiers bypassed and abandoned in the mountains and jungles of the southwest Pacific are effective and moving portrayals.

Gods of War is a fascinating book, as much for what it tells us about its author as for what it says about the war itself. It is also the first volume in a fictional trilogy on the Far East.

The second installment, covering the occupation of Japan, is now being written. Those of us who have been reading John Toland's works for nearly a quarter of a century await his next volume with keen anticipation.

COL. STANLEY L. FALK, U.S. Army Reserve, retired, Ph.D., was formerly deputy chief historian for Southeast Asia at the U.S. Army Center of Military History and is the author of five books on World War II in the Pacific.

Varied Fare

Armed Forces of Latin America. *Adrian J. English. Jane's Publishing Inc., 286 Congress St., Boston, Mass. 02210. 480 pages; maps; photographs; glossary; appendixes; select bibliography; index; $50.*

Over 300 photographs and maps illustrate this comprehensive reference source on Latin American armies, navies, air and paramilitary forces. Historic, geographic, political and economic factors are analyzed. In view of the region's growing economic and strategic importance, this survey is both essential and timely.

Citizen Soldiers: Oklahoma's National Guard. *Kenny Franks. University of Oklahoma Press, 1005 Asp Ave., Norman, Okla. 73019. 234 pages; maps; photographs; appendixes; notes; bibliography; index; $24.95.*

A richly illustrated and well-produced history of the Oklahoma National Guard from its origins as a territorial militia in the 1890s to the present day. Much of the narrative is devoted to the state's famous 45th Infantry Division, its formation in the early 1920s, its personalities and its long, outstanding combat record in World War II and Korea. There are also chapters on the World War I service of Oklahoma Guardsmen in the Texas–Oklahoma 36th Division and that state's draftees in the 90th Division of the National Army. The Oklahoma Air National Guard is covered in two chapters. The political aspects and the difficulties of federal–state military relations are not neglected; neither are the periods of state service, including some bizarre episodes from the rough-and-tumble of southwestern political and economic life, such as the "Red River bridge war" of 1931 and the seizure of oil wells during the Great Depression.

Red Armour: An Examination of the Soviet Mobile Force Concept. *Brig. Gen. Richard Simpkin. Brassey's Defence Publishers, Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, N.Y. 10523. 253 pages: illustrations; bibliography; appendixes; $36.*

" 'Simpkin on Armour' is a phrase widely accepted nowadays to indicate a source of high and largely unquestioned authority," states Gen. Sir John Hackett in the preface to this book. From that introduction, the author proceeds to give his analysis of Soviet methods of land warfare based on research from a wealth of Soviet and Western sources.

Special Operations in U.S. Strategy. *Frank R. Barnett, B. Hugh Tovar and Richard H. Shultz, eds. National Defense University Press. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. 326 pages; index; no price given.*

This is a collection of the major papers given in March 1983 at a symposium on "The Role of Special Operations in U.S. Strategy for the 1980s," which was jointly sponsored by the National Strategy Information Center, the National Security Studies Program at Georgetown University, Washington, D.C., and the National Defense University. The discussion that followed each presentation also appea as does the keynote address by Hon. John C Marsh Jr., secretary of the Army.

The Evolution of American Strategic Doctrin Paul H. Nitze and the Soviet Challeng *Steven L. Rearden. Westview Press, 55 Central Ave., Boulder, Colo. 80301. 1 pages; notes; appendix; $15.*

In this volume, the first of a series of boo on national strategic studies by the Johns Ho kins Foreign Policy Institute School of A vanced International Studies, the author pr vides an analysis of Paul H. Nitze's role in n tional security affairs. Mr. Rearden discuss the State Department senior arms control a viser's impact on American strategic policy well as his influence on arms control. M Nitze's productive public career is also exa ined—from his contribution to the Natio Security Council policy paper on U.S. stra gy in the early 1950s to his recent involvem in the SALT and Euromissile talks.

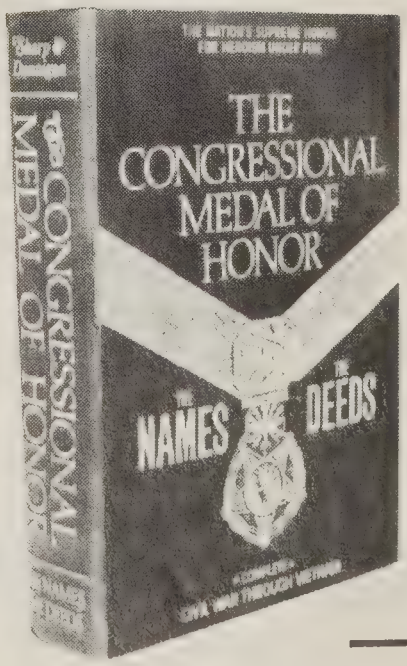
Blacks in the American Armed Forces, 17 1983: A Bibliography. *Lenwood G. Da and George Hill, comps. Greenwood Pre 88 Post Road West, Box 5007, Westpo Conn. 06881. 232 pages; appendixes; ind $35.*

"This work gives an overview of the m tary heritage of black Americans in defense America from the colonial period (1528–17 to the post-Vietnam era (1974–1981)." The f part of the book is a bibliography; the sec part includes appendixes and an index of thors, coauthors and editors.

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AUSA in Action

ice Chief Addresses Chapter, ites Quality of Today's Army

en. Maxwell R. Thurman, Army vice chief taff, spoke to a general membership ting of AUSA's Bogardus S. Cairns chap- t Ft. Rucker, Ala., where he announced Sp.5 Charmaine F. Townsend and Sp.4 olas T. Ciranni Jr. had been selected as Army Aviation Center's noncommissioned er and soldier of the year for 1985, re- tively.

.5 Townsend is an instructor in the De- nent of Enlisted Training's Air Traffic rol School and is assigned to Co. B, 1st alion, 1st Aviation Brigade (Air Assault). Ciranni is a member of the Army Infor- on and Systems Command Signal Bat- with duty assignment as an air traffic oller in Lowe Army Heliport's tower.

n. Thurman then gave a speech which ed claims that today's Army is not as tive as it was in 1980. "Today's Army tter. You, the citizens of Alabama, and the soldiers of Ft. Rucker, know your is substantially better off today than it in 1980 because you helped make it r," Gen. Thurman said.

named several additions to the Army's ment inventory, such as the M1 tank, Bradley fighting vehicle and the AH–64 he, which is the Army's new attack heli- r. This equipment, he said, means that rmy is now better able to fulfill its pri- mission of responding to threats against interests anywhere in the world.

dernization plans for the Army's equip- have been successful, Gen. Thurman , because the decision was made to ate resources to that end by limiting ctive-duty strength to 781,000. While tive Army's strength is not going to in- e, its quality will, he said, because "... of the high quality of the young men and women presenting themselves for service."

He compared statistics for 1980 and 1984 by saying, "In 1980, only a little over half of our recruits were high school graduates. But in 1984, we had our best year ever, finishing with 91 percent high school graduates."

The direct results of recruiting better-prepared, better-motivated soldiers, he reported, have been a record low in soldiers absent from duty without leave, a much lower crime rate and the lowest desertion rate since World War II. Gen. Thurman said he wanted everybody to understand that the Army is ready. "From 1775 at Lexington to 1983 in Grenada, your Army has defended the nation. It has not been easy; but if the nation calls upon us . . . we will be ready. When your Army is needed, we'll be there," he concluded.

Frank Moore of Daleville, chapter president, presented Gen. Thurman with a plaque as a memento of his visit to the Army Aviation Center.

Special recognition was paid to Nancy Patterson of Daleville for her selection as the civilian of the quarter. President Moore presented her with a chapter certificate of achievement. She is an education specialist with the Department of Combined Arms Tactics.

Color guard members for the awards ceremony were from Co. C (Pathfinder/Airborne), 509th Infantry, 1st Battalion, 1st Aviation Brigade (Air Assault). Music was provided by the 98th Army Band, also from the 1st Battalion.

BETTY J. GOODSON



Bogardus S. Cairns Chapter. *Gen. Maxwell R. Thurman, Army vice chief of staff* (left), *discusses the quality of Army manpower with Army Aviation Center NCO of the Year Sp.5 Charmaine F. Townsend* (center) *and Soldier of the Year Sp.4 Nicholas T. Ciranni Jr.* (right). *Gen. Thurman addressed more than 465 AUSA members.*

eptional Chapter Service'

rporate Member Designee Honored

ognition for exceptional service was to a Delta Airlines corporate member ee at an executive council meeting of 's Coastal Empire Chapter. Jane Paint- e-president for membership of the Ft. rt subchapter, was honored for her e to the chapter, particularly for her completing a special chapter project e betterment of Ft. Stewart.

e are proud of what you have accom- d, not only on this project, but in your ement with AUSA as a whole," said rtman, chapter president, in recogniz- s. Painter.

"I am proud of your months of tireless work which you devoted to the project," wrote Maj. Gen. H. Norman Schwarzkopf, commanding general, 24th Infantry Division (Mechanized), and Ft. Stewart/Hunter Army Airfield, in a letter to Ms. Painter.

She also received a certificate of commendation from the Coastal Empire Chapter, a certificate of commendation from AUSA national headquarters and an engraved wall plaque from the chapter. Ms. Painter is in charge of Delta Airline's Scheduled Airlines Traffic Office on the installation.

GENE SEXTON



Coastal Empire Chapter. *Jane Painter, Delta Airlines corporate member designee, is presented a certificate of commendation by Ed Gartman, chapter president, for her outstanding service to the chapter and Ft. Stewart.*

Around the Chapters



Albuquerque Chapter. *AUSA's Executive Vice-President Maj. Gen. Robert F. Cocklin, AUS, Ret., addresses a chapter luncheon. Gen. Cocklin discussed the Association's objectives and direction for the year.*



Bogardus S. Cairns Chapter. *Chapter President Frank Moore* (right) *presents a testimonial of appreciation from the chapter to CSM Richard Webb* (left) *for his efforts toward chapter promotion from 1 July to 31 December, 1984. CSM Webb was instrumental in successful chapter participation at the 1984 Annual Meeting.*



Chattahoochee Valley–Ft. Benning Chapter. *During the chapter's spring golf tournament, Mary Jackson serves lunch to Brig. Gen. Edwin H. Burba Jr.* (right), *assistant commandant of the Infantry School, while tournament participants wait their turn.*

Free Trip to October Meeting

USMA's Soldier of Year Receives Awards

The U.S. Military Academy's (USMA's) soldier of the year for 1984, Sp.4 Richard Hughes, was honored at a West Point Area Chapter spring sports luncheon where he received an engraved watch from Col. Richard L. Gruenther, USA, Ret., chapter president.

Sp.4 Hughes was named USMA's soldier of the year by a board made up of CSM Leo A. Dobmeier, command sergeant major, USMA; CSM Norma S. Hamm, command sergeant major, 1st Battalion, 1st Infantry; CSM Robert A. Whiteford, command sergeant major, U.S. Corps of Cadets; and SGM Edward F. Jones, medical department activity.

The honoree said of his selection, "To prepare for the soldier of the year board, I had to study a minimum of 60 to 70 hours. I used four different study guides, several field manuals and the *Soldier's Manual of Common Task Skills.*"

Sp.4 Hughes is a traffic accident investigator assigned to the USMA Military Police Co. He will also be given an expense-paid trip to the AUSA Annual Meeting in Washington, D.C., this October.



West Point Area Chapter. *Sp.4 Richard Hughes, U.S. Military Academy soldier of th year for 1984, is presented an engraved watch by Col. Richard L. Gruenther, US Ret., chapter president. The presentation took place at a chapter luncheon whe Charles C. Weyant* (center) *was the master of ceremonies.*



9th Support Command Subchapter (Korea Chapter). *Dr. Won Young Chung, corporate membership vice-president, speaks on how the Association supports the soldier. His remarks were made at a chapter breakfast.*

★ STAR CHAPTERS ★

Chapters that reach their aggregate membership targets are classified as Star Chapters and ll retain that status until they fail to reach any subsequent membership goal. The following chapers have achieved Star Chapter status. Chapters annotated with an asterisk have attained their miannual goal based on the 30 June, 1985, membership targets and the end-April 1985 membership statistics. Those chapters without asterisks achieved their Star Status based on the 31 ecember, 1984, membership goals.

Alaska (Anchorage)
Ark-O-Tex (Texarkana, Tex.)
Bavarian Alpine (Munich, Ger.)
Blue Mountain (Harrisburg, Pa.)
Bogardus S. Cairns (Ft. Rucker, Ala.)
Braxton Bragg (Ft. Bragg, N.C.)
Captain Shreve (Shreveport, La.)
Central Texas-Ft. Hood (Killeen)
Chattahoochee Valley-Ft. Benning (Columbus, Ga.)
Cincinnati (Ohio)
Coastal Empire (Ft. Stewart, Ga.)
Connecticut (Norwalk)
Denver Centennial (Colo.)
Des Moines Freedom (Iowa)
Dix (Ft. Dix, N.J.)
Douglas MacArthur (Norfolk, Va.)
Fairfax-Lee (Ft. Belvoir, Va.)
Florida Gulf Stream (Miami)
Ft. Armstrong (Rock Island, Ill.)
Ft. Jackson-Palmetto State (Columbia, S.C.)
Ft. Monmouth (N.J.)
Fort Pitt (Pittsburgh, Pa.)
Fort Worth (Tex.)
Gallant Pelham (Ft. McClellan, Ala.)
GA Omar N. Bradley (Ft. Bliss, Tex.)
Gen. Creighton W. Abrams (Frankfurt, Ger.)
Gen. Joseph W. Stilwell (Ft. Ord, Calif.)
Gen. W. C. Westmoreland (Reno, Nev.)
George Washington (Washington, D.C.)
Greater Augusta-Ft. Gordon (Ga.)
Greater Gulf Coast (Mobile, Ala.)
Greater Los Angeles (Calif.)
Hawaii (Honolulu)
Henry Leavenworth (Ft. Leavenworth, Kan.)
Indiana (Ft. Benjamin Harrison)
* Korea (Seoul)
Leonidas Polk (Ft. Polk, La.)
Long Island (N.Y.)
Magnolia (Jackson, Miss.)
Maine (Saco)
MG William F. Dean (Oakland, Calif.)
* MG Henry G. Sharpe (Lathrop, Calif.)
* Marne-Franconia (Würzburg, Ger.)
Massachusetts Bay (Boston)
Mid-America (Wichita, Kan.)
* Mid-Palatinate (Kaiserslautern, Ger.)
* Middle Forge (Dover, N.J.)
Mother Lode (Sacramento, Calif.)
New Orleans (La.)
New River Valley (Radford, Va.)
Norddeutschland (Bremerhaven, Ger.)
* Old Ironsides (Ansbach, Ger.)
Pikes Peak (Ft. Carson, Colo.)
* Polar Bear (Fairbanks, Alaska)
* Puerto Rico (Ft. Buchanan)
Robert E. Lee (Ft. Lee, Va.)
San Bernardino-High Desert (Barstow, Calif.)
* San Diego (Calif.)
San Jacinto (Houston, Tex.)
Southeastern Oklahoma (McAlester)
* Southern Arizona (Ft. Huachuca)
* Southern New Mexico (Las Cruces)
* Southwest Oklahoma (Ft. Sill)
* Spearhead (Frankfurt, Ger.)
Sunshine (Orlando, Fla.)
Tacoma-Ft. Lewis-Olympia (Wash.)
Texas Capital Area (Austin)
West Point Area (N.Y.)
Wright Brothers (Dayton, Ohio)
* Yorktown (Zweibrücken, Ger.)

Guard and Reserve Topics of Luncheon

"Guardsmen and Reservists make the best employees," according to David H. Fisher Jr., the newly appointed chairman of the Kansas Committee for Employer Support of the Guard and Reserve. Mr. Fisher, president of Dave Fisher Jr. Productions Inc. of Topeka, Kan., addressed AUSA's Topeka Chapter at a luncheon meeting.



Topeka Chapter. *David H. Fisher Jr., chairman of the Kansas Committee for Employer Support of the Guard and Reserve, addresses a chapter luncheon. Mr. Fisher discussed how employers can best support citizen–soldiers.*

Speaking on behalf of the committee, Mr. Fisher outlined its goals and objectives, which are "to have all employers in Kansas recognize the important role of Guardsmen and Reservists in the security of our country [and] to feel pride in letting them off work because they feel that they [as employers] are helping in their own way to keep costs down and to defend our country."

The role of the Guard and Reserve in national defense has grown. Currently, 49 percent of the nation's defense capability comes from the Guard and Reserve, and within the next few years, this percentage is expected to increase to 54.

The potential for conflicts arising between reserve employees and employers may also increase. Mr. Fisher, as committee state chairman, believes that employers and employees can work together in protecting the nation.

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Virginia Peninsula Chapter. *Gen. William R. Richardson* (left), *commanding general, U.S. Army Training and Doctrine Command, and Ft. Monroe, Va., Post Commander Col. Stephen H. Kelley present an Army dress blue uniform to the Ft. Monroe NCO of the year, Sp.5 Michele A. Fisel, during a chapter corporate member reception.*

Chapter Notes

Greater Los Angeles Chapter. Hon. Jay Sculley, assistant secretary of the Army, search, development and acquisition, c cussed the Army's challenges while addre ing a chapter industrial dinner.

At another dinner meeting, the associa heard from Robert O. Black, Army Mate Command, who talked about the Army's quisition process.

Rhode Island Chapter. "Special Trust a Confidence: Military Leadership" was subject of a talk given by Maj. Gen. John Salesses, USMC Reserve, at a chapter l cheon cosponsored by the Greater Pr dence Chamber of Commerce.

Fort Worth Chapter. Brig. Gen. John Bahnsen Jr., chief of staff, III Corps and Hood, discussed "Your Army at Ft. Ho at a chapter meeting cosponsored by Fort Worth Chamber of Commerce.

Hawaii Chapter. The Hon. Verne Orr, se tary of the Air Force, was the keynote spe er at a luncheon cosponsored by the ch ter and the Air Force Association, the N League, and the Pacific and Asian Aff Command.

Florida Gulf Stream Chapter. Ambassa to the United Nations designate Lt. G Vernon A. Walters, USA, Ret., gave a sentation at a "Committee 21" luncheon hosted with the Coral Gables Chambe Commerce.

Dallas Chapter. "Soviet awareness" the subject of a presentation made by Tom Glasen, Texas National Guard, Capt. David Clements, USAR School, chapter dinner meeting.

Cincinnati Chapter. Maj. Tom A. Hanna cussed the ROTC program while spea at a chapter luncheon. Maj. Hanna is ROTC instructor at Xavier University.

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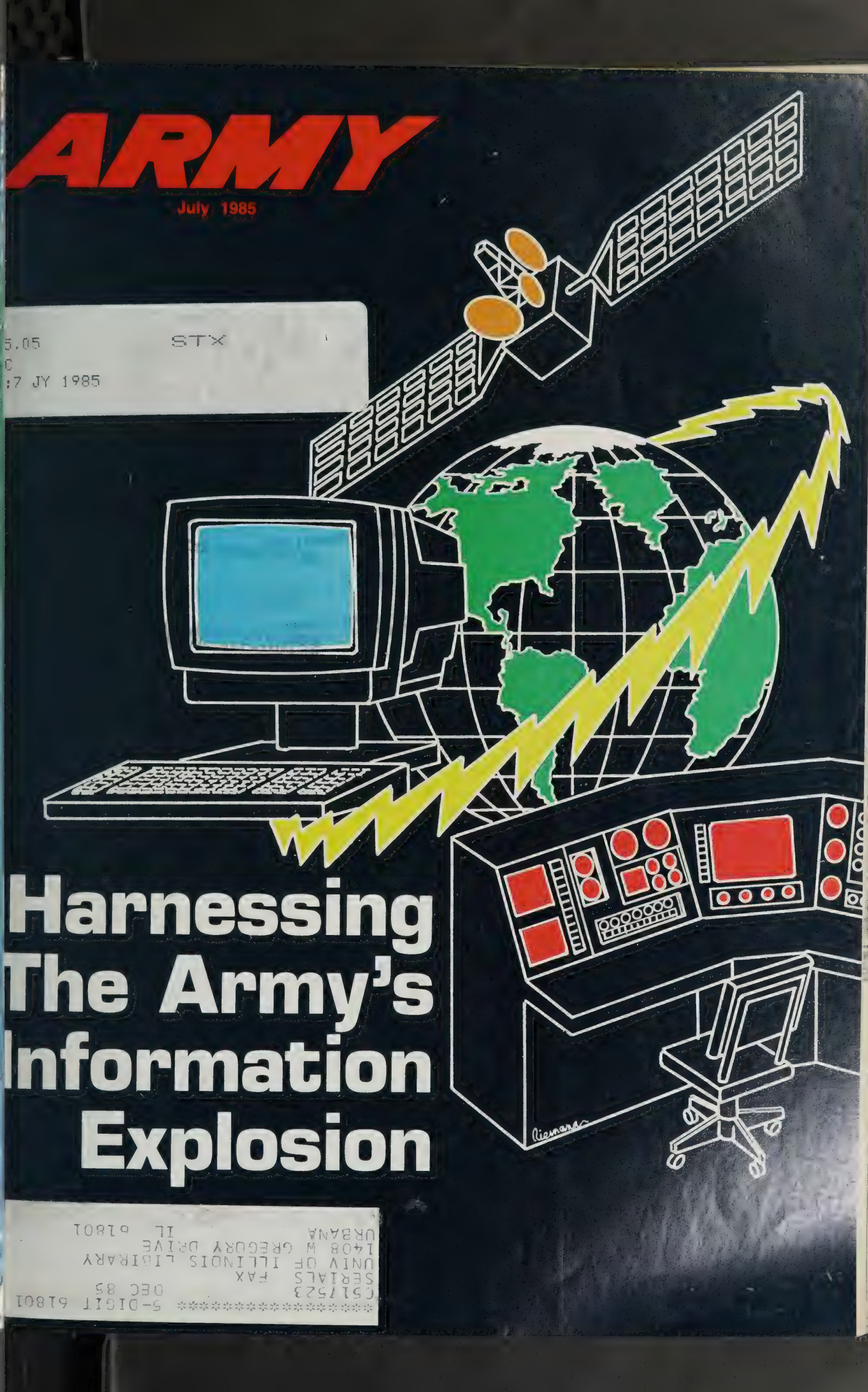
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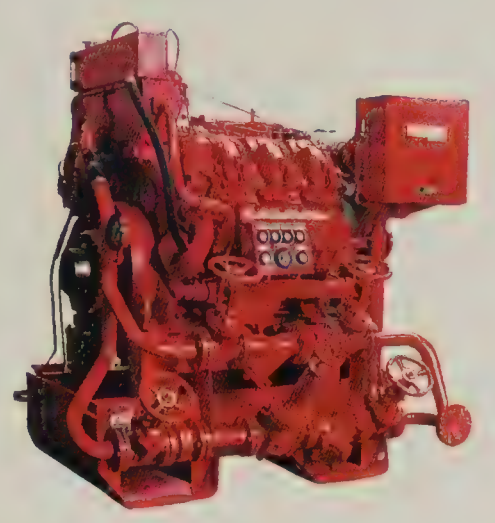
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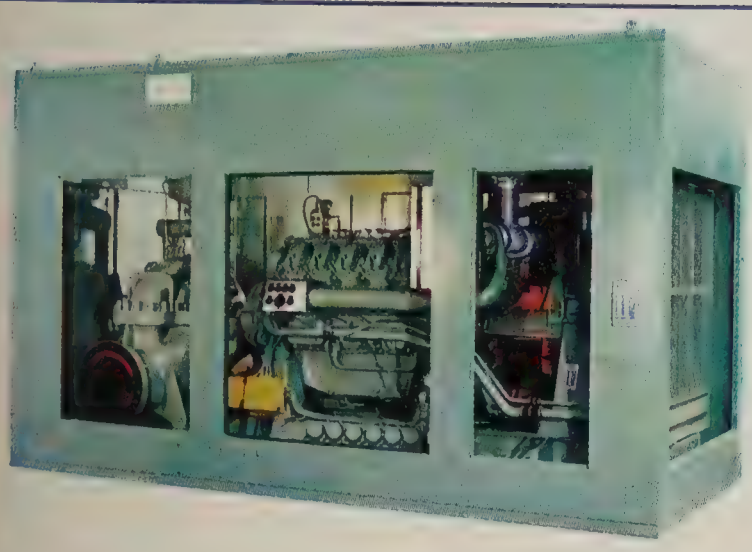
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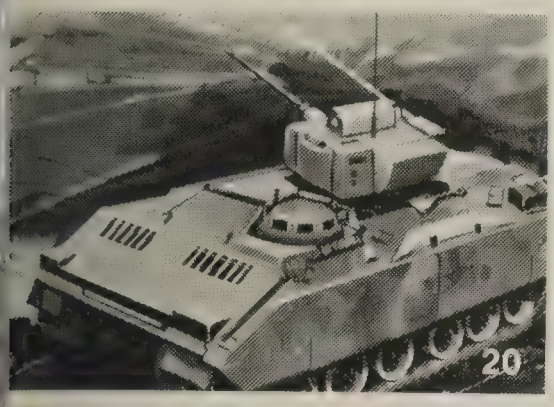
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ARMY
The Magazine of Landpower

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69 **Inculcating Martial Pride**
The infantry, as traditional "Queen of Battle," is a fitting example of how history serves to instill unit or branch *esprit de corps.* **By Maj. Gen. A. S. Newman, USA, Ret.**

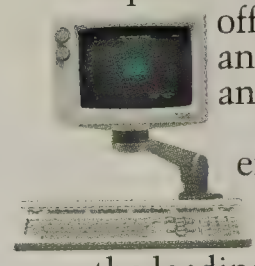
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Readers Praise Concise Article on Central America

■ I appreciated the fine article writ- by Rep. Ike Skelton, "Central Ameri- A Whole New Set of U.S. Concerns" ay), regarding the present congression- lebate over U.S. policies toward Nica- ua.

ome of us remember that the situation Nicaragua today is not unlike that ich existed in Cuba in 1959. Then now, although many well-intentioned ericans thought those in the new rev- tionary government sounded like mil- it communists, they were viewed more ationalists who successfully overthrew



Letters

talitarian regime.

Unfortunately, the good intentions of erican apologists for the Sandinista ernment are playing a frightening game n the future of the United States. If *contras* are not supported by the erican Congress now, the Sandinistas secure for the Soviet Union another hold in this hemisphere. America can- tolerate Central America to fall as enseless prey to the Soviets and their an surrogates. This issue is not only survival of a free Central America Mexico but also addresses the very rity of our borders.

cannot honestly comprehend how nbers of Congress who are sworn to ect and defend this nation's security possible permit another Soviet colo- o be created in Central America. Real- s what it is. The Russians and Cubans uilding a military presence and foot- l right at our back door.

When do we say no? When do all of members of Congress begin to think t our nation's security first and quit ogizing for the communist govern- t in Nicaragua? We must rid this isphere of this expansionist and to- arian cancer growing near our bor-

is most interesting to note that right the recent House vote to deny the ident his request for aid to the *con-* Daniel Ortega went to Moscow to in additional military and economic ort for his dictatorship. Maybe this nt slap in the face to the congres- al apologists for the Sandinistas will ly illustrate to all members of Con- the serious threat now facing this sphere in Nicaragua.

less Congress supports the President's ies for humanitarian and military o the *contras,* I fear that Americans eventually be faced with the need to send military forces to fight in this region. The other dismal alternative is that Congress will continue to deny the President's requests; we will do nothing and then find our entire hemisphere in the midst of Soviet and Cuban-sponsored revolutions.

All Americans should immediately make contact with their elected representatives in Washington, D.C., to urge them to support President Reagan's policies in Central America. We cannot afford to make the same mistake in Nicaragua in 1985 that we made in Cuba in 1959.

The time is now for concerned and responsible Americans to act in the interests of peace and national security.

DAVID M. JINKENS
Monteca, Calif.

■ Rep. Ike Skelton's article, "Central America: A Whole New Set of U.S. Concerns" (May), was right on target. What an uncommonly clear and concise summary of one of our nation's most pressing problems in foreign affairs.

Thank goodness he is a member of Congress *and* on the Armed Services Committee. Would that his article could be read by every citizen of the United States.

LT. COL. ROBERT F. FECHNER
Novato, Calif.

Tactful Editor

■ The "Editor's Note" in the June issue about the *Waffen SS* in response to the letter from Col. John A. Buesseler, M.D., is superb. It is well written, accurate and said what every U.S. officer and soldier serving in Germany should know. My battalion was in charge of an *SS* POW camp shortly after the war and my talks with the prisoners (I was trying to improve my German) led me to the same overall characterization that appeared in the "Editor's Note."

The article by Col. James W. Shugart III, "Needed: A Workable Definition of 'One Army' " ("Front & Center," June), is also excellent. I have made the same basic point in articles in ARMY and the *Military Review.* However, I never reached the level of tact that he did.

IRVING HEYMONT
Alexandria, Va.

Inchon Insight

■ The letter in the May issue, "Reader Lauds Significance of Operational Art Article," by Col. Frank G. Walton, U.S. Army, retired, implies that "a stroke as bold as the Inchon landing" was the brainchild of Gen. Douglas MacArthur. In the fall of 1948, plans division of G4 department of Army General Staff initiated a series of strategic logistic studies (SLS). These were designed to ascertain in advance what unusual logistic requirements could be expected in various potential theaters of operation.

The vehicle for each study was an assumed enemy attack and a U.S. response. Operation concepts were provided with 30-day phase lines of advance from which technical service staffs would compute special logistical support requirements for the troop units involved.

One such study was SL-17 which envisioned an invasion of South Korea across the 38th parallel. The strategic concept was drawn up by a lieutenant colonel in the strategic plans section of plans division. This concept, concurred in by the other sections of the General Staff, called for a retreat to and defense of the Pusan perimeter, buildup and breakout *and an amphibious landing at Inchon* to cut enemy supply lines.

SL-17 was approved, printed and distributed to the General Staff and the technical services early in the week of 19 June, 1950. The invasion by the North Koreans

came on 25 June, 1950. Gen. MacArthur's Far East headquarters in Tokyo urgently requested 50 copies of SL-17 the week of 26 June, 1950. This is where Gen. MacArthur got his idea of the Inchon landing. Let's set the record straight.

I know, because I was the staff officer in G4 Plans Division who wrote the strategic concept for SL-17.

Col. Donald McB. Curtis
U.S. Army, retired
Colorado Springs, Colo.

Stubborn *Mujahedeen*

■ Regarding Paul L. Moorcraft's article on Afghanistan's stubborn *mujahedeen* ("Bloody Standoff in Afghanistan," April), the report on the whole isn't bad, but it isn't very good either, despite the pictures, which vary in quality and substance. Although Mr. Moorcraft apparently undertook some degree of personal risk in his visits, I cannot help but think that everybody going there was in the same boat, regardless of the presence of the Soviets.

He shows his British colors in his assumed bias against any prescient American influence in the area. For example, Mr. Moorcraft gets the needle in when he suggests that the United States lost out on the chemical warfare and genocide issues. Could it be that we lacked the hard evidence to press these odious matters?

I think Mr. Moorcraft also goes overboard in his references to men-women relationships and reforms in Afghanistan. Most westerners I have known have had great difficulty reaching a reasonable level of understanding on this matter, regardless of their own backgrounds and experiences.

As one who worked the Afghan desk at the Defense Intelligence Agency (DIA), I think these obdurate and resourceful people deserve our qualified support despite the limitations of using it effectively. The essential reason is the ominous and prescriptive Soviet influence in this and in other parts of the world.

We in DIA never could decide whether to love, despise or ridicule the Afghans, but as Mr. Moorcraft aptly points out, they don't give much of a damn about their northern neighbors or anyone else for that matter, much less the Brits or Americans.

If that is what we call "fiercely independent," so be it.

Lt. Col. James MacNider
U.S. Army, retired
Phoenix, Ariz.

■ I read with interest Paul L. Moorcraft's masterly piece on the Afghan resistance in the April issue ("Bloody Standoff in Afghanistan"). He overlooked one point in his reference to "antique" weapons popular among the *mujahedeen*.

I'll quote from a recent book by James Dunnigan (who occasionally instructs at the Army War College). The subject is the old Afghan goat (dinner)-shooting contest:

> A major part of tribal socialization is to learn how to use a rifle, and use it accurately, from the age of five. The goat is "maybe a thousand meters away." The competitors get one shot apiece. However, if you're in the goat shoot, you'd better not be third in line because the goat is usually dispatched by either the first or second marksman. If you can shoot a goat at 1,000 meters, you can shoot [the enemy] at 1,000 meters. . . .
>
> In many places, Afghan bolt-action Enfields are superior to the Russian automatic rifles (AKMs and AK74s), especially at great distances (like the goat shoot) when the Enfield's excellent long-range accuracy can be utilized. The guerrillas also have AKs, acquired on the black market from defecting Afghan army troops. . . .

Standard ballistic tables show that a 174-grain .303 bullet at one kilometer still has the power to do great damage, which is something the 5.56-mm won't exactly do (but then, an automatic's nicer up close). Moral: never disparage the older weapons, especially in the hands of competent troops.

James A. F. Compton
La Mesa, Calif.

ARMY invites letters to the editor. The subject matter may be about material that has appeared in the magazine or about any topic which the writer feels would be of interest to ARMY readers. The editors reserve the right to edit letters for reasons of style, accuracy or because of space limitation. All the letters must be signed, and while we prefer to carry the writers' names we will consider requests for withholding them if there is a compelling reason to do so.
The Editors



"It's so nice and peaceful out here. I hope no one drops in on us."

Assessment Techniques Lauded

■ Major Robert L. Maginnis's article "Picking AirLand Battle's Leaders" (April) was interesting in that he recommende the use of assessment techniques to pre pare leaders for battle.

I heartily agree that the place to cor duct this assessment is within the Arm school system. In this manner consister and periodic assessment will show off cers and NCOs alike where their weak nesses and strengths are and measure the progress in developing their strengths.

Our experience at Ft. Benning in th Army Assessment Center during 197 and 1974 clearly demonstrated that use o assessment techniques was well receive by the participants and all commente positively on the training value.

Incidentally, we trained 18 officers o NCOs at a time in a developmental cour that did last three days, but a modifie assessment course was recommended fo Army service school use.

Col. Wallace F. Veaudry
U.S. Army, retired
Columbus, Ga.

Not the Whole Story

■ Maj. Mitchell M. Zais's article, "A dant du Picq: Unsung Giant of Milita Theory" (April), summarized exceller ly the career of this influential milita thinker and the salient points of his ph losophy of small unit morale and leade ship. However, he did not point out t nightmarish consequences that befell t French army through the misdirecti and misapplication of Ardant du Pic theories that occurred in the years befc World War I.

As has been portrayed in two excelle books, Barbara Tuchman's *The Guns August* and Alistair Horne's *The Price Glory: Verdun 1916*, the basic theses Ardant du Picq—that morale and col sion are significant tools of victory—w perverted into the *offensive à outran* that ignored the practical realities of evo ing tactics and technology.

Under Henri Bergson, another pow ful French thinker, the impact of mor was transformed into an all-sweepi *élan vital* that abandoned all notions defense and substituted a shadowy m tique of "the will to conquer" in place firepower, efficiency and tactical sou ness.

In the guise of Plan 17, the spirit *élan vital* marched to war in August 19 only to die on the slopes of the Vosg It continued to die a lingering death in bloody Champagne offensive of 19 and still later in the "meat grinder" Verdun in 1916 and the futile Nivelle fensive of 1917 that led to massive m nies throughout the French army. failure of these actions all served to derscore one point.

The lesson that had been forgotten by nce's prewar theorists was that cohen and morale are not a war-winning all and end-all in themselves but are her enhancers of combat efficiency, a nerstone to victory. There is no subute for technical and tactical exper-; coupled with courage and spirit, a r-winning combination is forged. Doce must always be tempered by comn sense and pragmatism based on the nands of the mission at hand.

n the light of the decimation of an en- generation even during the opening nths of combat in World War I—and view of the sacrificing of vast numbers soldiers by Iran, again in the spirit of *n vital*—this is a lesson that must nevbe forgotten.

1st Lt. Jack H. McCall Jr.
nau, West Germany

New World?

I don't mean to make waves, or k on Sp.4 Karen Jeffers' father, but as ormer member of the Navy, "Goodies n the Home Front" by Robert A. Deck- ("Front & Center," April) piqued my rest.

Although the article is humorous and ertaining, the underlying subject is the nging roles of men and women. Dads v bake muffins and daughters now ch off to paratrooper training. As a ner small craft coxwain at Pearl Har-, Hawaii, I am able to verify that the ve new world is now as it should be. ot candy. And it was sweet.

Sharon Marie Culbertson
cinnati, Ohio

ratorium as Solution

President Reagan argues for more missiles to support our Geneva neators, but the MX is both a tempting vulnerable target, and a first-strike at. More of the highly destabilizing s, therefore, would lessen our securind our ability to deter nuclear war surely would handicap our negotia-

.

ather, Congress should pass a bilateroratorium, subject to reciprocal ac- by the Soviets, banning the testing eployment of nuclear or space weap- Both parties already monitor testing deployment with a high level of conce.

ban on testing and deployment would ediately halt the arms race. That ld increase security on both sides greatly simplify and facilitate negotis toward deep reductions in U.S. Soviet nuclear arsenals, the stated ediate goal of both countries.

o doubt some of our security-minded lators believe we need more action crease our security. To gain their s, let's permit the replacement on both sides of some destabilizing and vulnerable first-strike nuclear weapons (those with the high speed, extreme accuracy and great explosive power required for a surprise attack on hardened nuclear silos and command centers) with an equal number of less-threatening and more-survivable second-strike warheads, until such time as we can reach an agreement on nuclear arms reductions. Every such replacement of a first-strike weapon on either side would increase security on both sides.

CW4 Tom Burtis
U.S. Army, retired
Lubbock, Tex.

Cambodian Invasion

■ In the May issue of Army, retired Army Col. Frank G. Walton comments on "A New Day for Operational Art" by Col. L. D. Holder (March). Col. Walton states, with respect to the Cambodian operation, that "it was conceived, designed and directed by the White House national security advisor." Let us examine this statement.

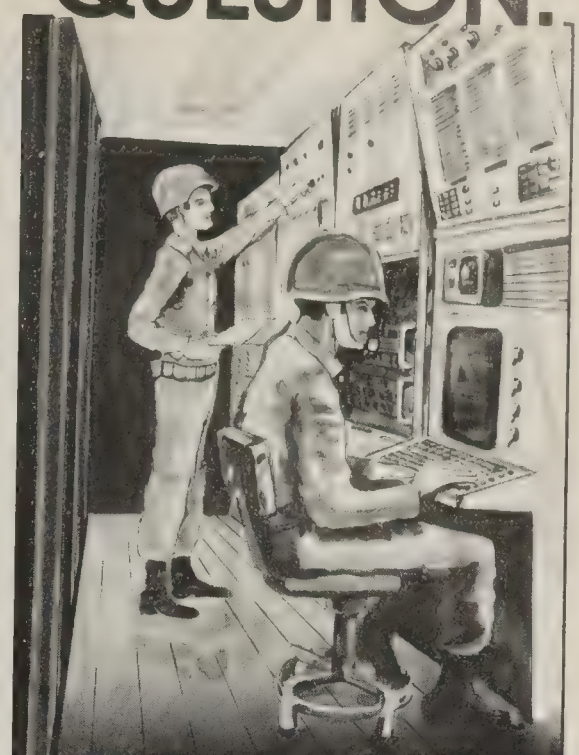
First, as to conceiving the operation: the need for an operation to evict the North Vietnamese army from its Cambodian sanctuaries and to seize the considerable supplies cached there was obvious to all who served in the U.S. Army in Vietnam and had been entertained by the Commander, U.S. Military Assistance Command, Vietnam (COMUSMACV), for some time prior to the actual operation.

Second, as to the design and direction of the operation: on or about 25 April, 1970, Gen. Creighton W. Abrams, the COMUSMACV, met with the commanding general, II Field Force-Vietnam (CG, II FFV) at the latter's headquarters outside of Bein Hoa. There he issued a classic mission-type field order: "I want you to be prepared to go into Cambodia on 72 hours notice and clean out those North Vietnamese army sanctuaries and supply dumps over there. Let me know when you are ready to go. Do you have any questions?"

Gen. Abrams reduced the 72 hours to 24 hours after the CG, II FFV brought his operational plan to him. He approved the plan without change. Subsequently, he issued no further instructions during the campaign other than those limiting the depth of the operation and specifying the withdrawal date. These instructions apparently originated in Washington and may well have come from an apprehensive "White House national security advisor."

During the course of the Cambodian operation, Gen. Abrams received a considerable stream of back-channel messages from Washington. Some of these could possibly have represented an effort by "the White House national security ad-

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A future generation of infrared "eyes" for space surveillance systems will be far more capable as the result of technology advances at Hughes. These systems will be able to see distant targets in space, in the air, or on the ground—and relay data instantly to ground stations. Advances are being made in focal plane design, signal processing architecture, and in the design of a unique sensor with very steady telescoping optics. By building modularity and programmability into the new technologies, researchers are making it possible for systems to use tailored combinations from a single family of hardware and software. For its advances, Hughes received an Award for Technical Achievement from the Strategic Technology Office of the Defense Advanced Research Projects Agency. This effort was sponsored by DARPA and monitored by the U.S. Air Force Space Technology Center.

Jordan's army will be able to pinpoint the source of artillery fire with an advanced weapon-locating radar. The TPQ-37 Firefinder radar radiates pencil beams from an electronic scanning antenna to create an electronic curtain over a battlefield. It detects rockets, artillery, and mortar shells as they pierce this curtain and backplots their paths to determine the location of the hostile weapons. This information is forwarded to friendly weapons for counterfire, sometimes even before the incoming rounds hit. The mobile radar can be moved in rugged terrain and set up for operation by a small crew within minutes. The TPQ-37 operates automatically and can be monitored by one soldier. Hughes is delivering Firefinder radars to Jordan.

F-4F Phantoms equipped with the same radar carried by F/A-18 Hornets will maintain their effectiveness through the end of the century. The AN/APG-65 radar is an all-digital multimode system designed for both air-to-air and air-to-surface missions. In air-to-air operations, the Hughes radar will give the Phantom a clean radar scope in either look-up or look-down attitudes. It will also provide track-while-scan capability, long-range search and track, and close-in combat modes. The all-weather sensor will make the aircraft fully AIM-120 (Amraam) capable. Hughes is under contract from Messerschmitt-Boelkow-Blohm for the definition phase of West Germany's F-4F Improved Combat Efficiency program. The company will also work with AEG-Telefunken on the program.

Jam-resistant communications have been introduced into NATO by a new terminal for AWACS early-warning aircraft. The Joint Tactical Information Distribution System (JTIDS) Class 1 terminal is designed to combat the formidable and growing electronic countermeasures threat to tactical communications. JTIDS uses principles of time division multiple access to provide secure, high-capacity communications for AWACS radar planes and ground stations. The system relays a wide variety of information, such as command and control, surveillance, intelligence, force status, target assignments, warnings and alerts, weather, and logistics. Software filtering lets each participant select data pertinent to his own needs. Hughes is producing the JTIDS terminal for use with NATO's Airborne Early Warning/Ground Environment Integration Segment (AEGIS).

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or" to direct the on-going operation. any event, none of this traffic was sed on to the CG, II FFV.

was typical of Gen. Abram's leader- in both peace and war that he an- nced his objectives, gave his subordi- e commanders their missions and al- ed them to carry them out without rference from above as long as his ctives were being attained. The con- t of the Cambodian operation typi- his leadership.

ly familiarity with who "conceived, gned and directed" the Cambodian ration stems from my having been CG, II FFV at the time.

GEN. MICHAEL S. DAVISON
U.S. Army, retired
ngton, Va.

l War Tales

It was such a pleasant surprise to the article on the Civil War in the thwest, "The Target Was California," Robert S. McKay, in the March issue ARMY.

ne route from Mesilla to Ft. Union is an historic one, and the area through Glorieta Pass is famous for the vari- Indian battles there in addition to Union–Confederate showdown. For history buff, Glorieta Pass is also the tion of the earliest known Indian set- ent in the area. The Pecos National ument, in the pass at the headwaters ne Pecos River, is the home of a res- ion of that early Indian civilization. r those of us who have lived in New ico, the article tied together many e ends from tales we had heard.

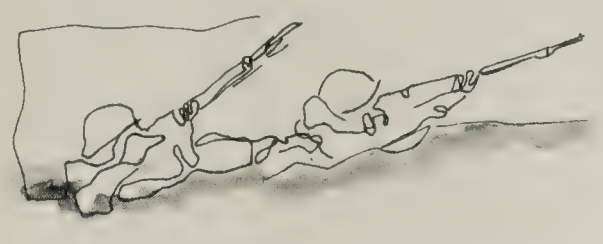
BRIG. GEN. D. E. BREAKEFIELD
U.S. Army, retired
pensburg, Pa.

DOC Concerns

I read the letter of Col. Frank G. on, U.S. Army, retired, to the editor much interest ("Training Rehashed," ers," March). We in Training and ine Command (TRADOC) share Col. on's concerns, which he expressed sponse to "Systems Approach to bat Training" by Col. Andrew P. ara Jr. and Lt. Col. Raymond C. en Jr. in the January issue.

are taking steps to correct the prob- he has identified. Training develop- each TRADOC school are working the field to identify the truly impor- raining tasks, as well as the individ- oldier skills necessary for survival. re working also throughout the Ar- integrate spirit and discipline into raining programs.

l. Walton expresses the frustrations ave all felt with the reams of paper were produced by the Army in the ken belief that training responsibil- ould be exported from the training base to the Army in the field. At Gen. William R. Richardson's direction, all TRADOC schools are working now to incorporate as much training as possible into the courses of instruction conducted in the training base in order to relieve the pressures on the company commander and the noncommissioned officer in the field.



Gen. Richardson has also directed that we work to reduce our training manuals to the absolute minimum in order to capture "what to train" and "how to train" in a manageable format to ease the training burden in the field. We are pleased to be able to report that the first improved Army training and evaluation program products are now in production and will be field tested this summer. They have been found to be winners in all of the units testing them.

Col. Walton correctly points out that airborne training has many payoffs that are not directly related to the skills and tasks associated with exiting the aircraft and making a correct parachute landing fall. The course has been successful in providing superbly conditioned soldiers and instilling a large measure of confidence and obedience in them, qualities that have distinguished our airborne units for over 40 years.

The example given in the article concerning added efficiencies and airborne training was an unfortunate one that deserved Col. Walton's criticism. The point of the discussion was to show the importance of narrowing our focus in training to the essential tasks and techniques, thus ensuring that they are included in the training. As Col. Walton observed, motivation and discipline are essential. Without these ingredients, the Army cannot perform its mission to deter conflict and protect our country. A key characteristic of the obedient soldier is his ability to subordinate his will to his superiors.

This is no easy task for any man in uniform. It only becomes easy when each of us in a position of authority is equipped to be the coach and teacher of those we lead. Moreover, our soldiers must enjoy the confidence that they are physically fit and technically competent to employ their individual skills in a team effort. Disciplined units are composed of obedient soldiers, led by men who are worthy of the respect of their subordinates and are physically fit and thoroughly competent to teach and lead, fight and win.

Such is the Army that we are working to build today. The purpose of the article was not to denigrate the achievements of the past, but to point out that new techniques have emerged that have the potential to increase the effectiveness of the U.S. soldier in battle.

We are building an Army that has tremendous fighting capacity. One day it will dwarf the combat effectiveness of any army the United States has fielded. Its drills are producing great payoffs in small-unit teamwork to match new weapons systems of greater lethality.

We have no intention of surrendering any of the fine lessons of the past as we build upon the achievements of yesterday and incorporate the best of today's technology.

COL. ANDREW P. O'MEARA JR.
Ft. Eustis, Va.

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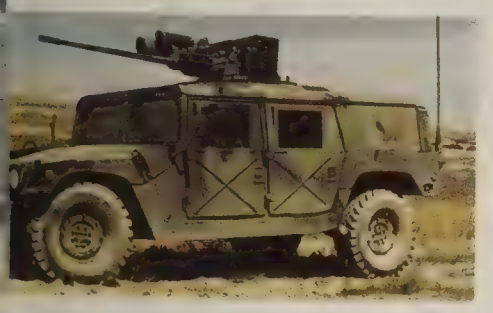
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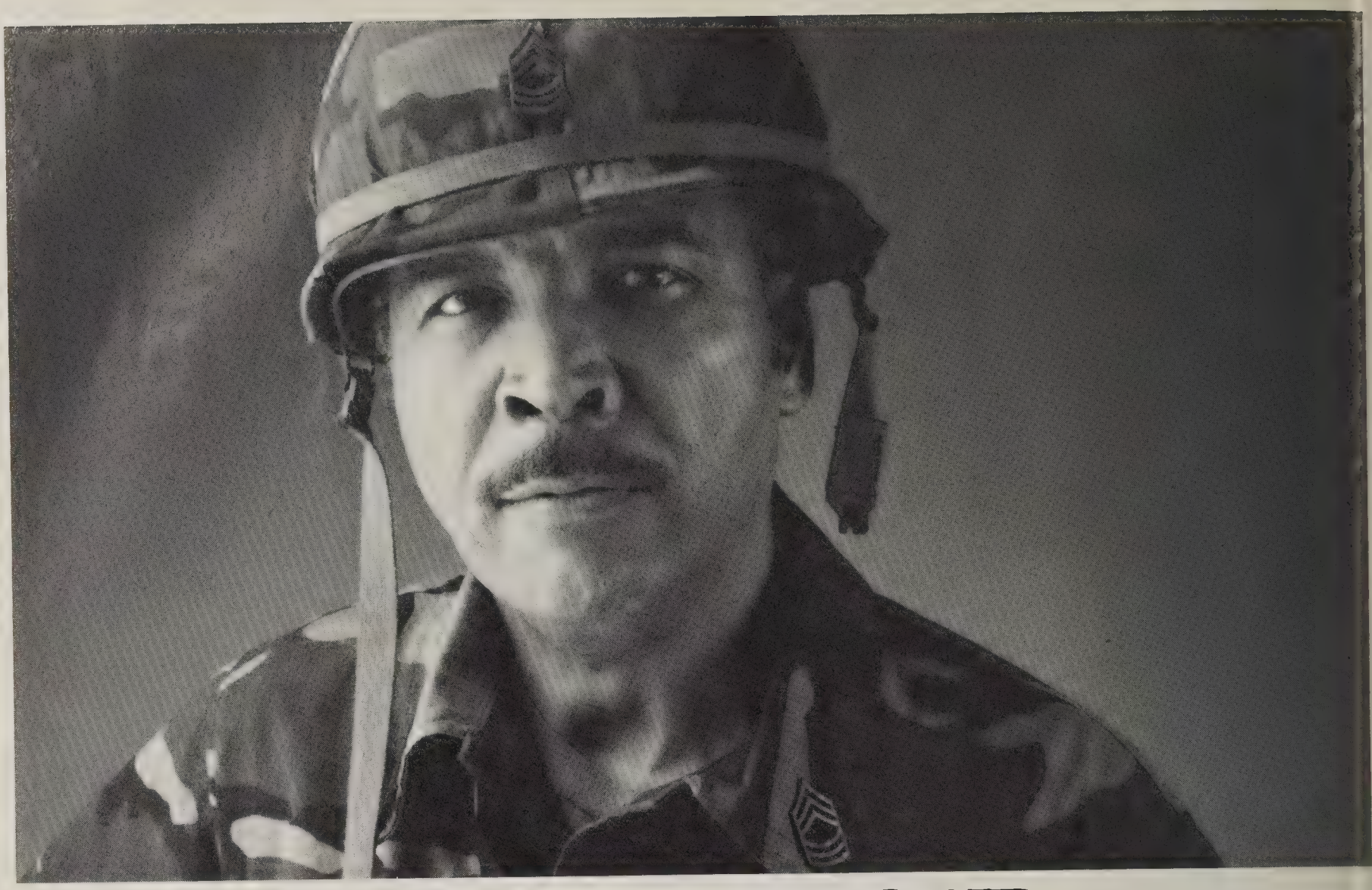
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r Some, 'Service Is Their Testimony'

)n Veterans and Veterans: Two Kinds of Duty

By Col. Henry Henn
AUS, retired



" hey meet on the green to retell their tales of war or on the street to pa- e, out of step, on holidays. They wear nkled camouflage uniforms, jungle ›ts, berets, bush hats, scarves and jack- an odd assortment of war regalia. hese people are the focus of media ntion. And why not? They are vet- ns, veterans all, to the news media, to world and, in a peculiar way, to the ervice of some other veterans: the eran veterans dedicated to the noble fession of arms.

Memorial Day ceremonies at Arling- National Cemetery, 1984, were at- ded by reporters from all the televi- networks and wire services, there to rd the national remorse over the Viet- war. The nation watched and lis- ed as veterans, standing with loved s and friends, told of their sacrifices their bitterness at not being recog- d as heroes. The unblinking eye of vision and the attentive ear of the rophone caught it all—almost.

here were other veterans—veteran vet- ns—on the scene that day, but off era. The veteran veterans escaped lic notice. It was neither their first last time to be lost to view. The nor Guard at the Tomb of the Un- wns, veteran veterans, journeymen war, were there marching stiffly on ch over hallowed ground. They got ing notice, if any. Musicians of the y, Navy and Marine bands were e, veteran veterans, serving as their nts allowed; heard but unseen.

et no one disparage the one-time, -war veteran who served his country s time of need. His is honor earned. and his fellows count; their voices ld be heard. But what about the vet- veterans, those who served and con- e to serve?

he news media fail to focus on them. often the veteran veteran's response he media is, "No comment." Their rd is their testimony. Service is their er. Their presence anywhere is a sto- nto itself; duty performed for duty's , for others too old, too young or removed to be involved.

merica, your veterans are ever pres- in war or peace, in sight or out of d. They are veterans in the very act ecoming veterans; at the Berlin Wall, g the demilitarized zone in Korea or he Mall in Washington, D.C., har- ng hope instead of grudges, doing so that others may do otherwise.

On any Memorial Day, Veteran's Day or Fourth of July there will be the usual veteran turnout. Other veterans, veteran veterans, will be there, too; unnoticed, uncounted.

The military police will be keeping order, the chaplains will be giving benedic-

Front & Center

tion, the chiefs of staff will be planning the welfare of country and countrymen, of warriors yet to be mustered for wars —God forbid—yet to be fought.

Perhaps it has always been so. I recall an ancestor, the village social problem, a roisterer and drunk, who was virtually immune to censure or arrest.

They called him "Shooter," a veteran of the siege at Peking in the Boxer Rebellion. To the best of my knowledge, his sole occupation was acting the veteran after mustering out of his single-hitch, single-war experience. "We can't arrest Shooter," the police would say when called to quell his mischief. "Shooter is a veteran."

There was an uncle, too, neither town drunk nor any kind of hero. His greatest battles, to hear him tell of them, were in the bars and brothels of Chillicothe, Ohio, just outside of camp.

Uncle never went to war, but he was in the vanguard of the veterans' march on Washington in 1932. Afterward he became a farmer, machinist and rancher, but the only framed photograph hanging on his wall was that of him in uniform.

Another uncle served a peacetime hitch in the Navy and later bought back his time for early discharge. He came home a veteran. His war trophies were a stiletto wrested from a pimp in Manila and a garter from a whore in Singapore. He became part of every Memorial Day parade and often bore the colors. He always bore the title of "veteran." He was a veteran evermore, even with his buy-out discharge and his mothballed middy.

As a child I saw the bearded, bluecoat veterans on parade, the Grand Army of the Republic. To me, soldiers were soldiers even as now, to most, veterans are veterans. I thought of all of the paraders as soldiers. Never did I see or even hear of the regular Army officers and men serving full duty at half pay during the Great Depression. The honors and hurrahs were for veterans past. There were no huzzahs for the faithful few reduced in numbers and reduced in pay who manned the idle machines of war.

Every soldier who serves his country deserves recognition, thanks and appreciation—not adulation, for however much or little he may have done. But he, and we, should understand that the one-time, one-war veteran was not the only one to have been drenched with the toxic rains of agent orange, or to have bled of wounds, or to have languished in captivity or to have anguished in the bereavement of a fallen friend.

We can and must abide the veteran without the self-flagellation that seems to characterize public and press attention of late. A war is a war is a war; as in Vietnam, Korea, World War II, World War I and on into history. It is not that war is moral or immoral, noble or even legal, but that duty is honorable.

Vietnam did not bring drug addiction to the soldier. Drugs came to the war

from the campuses and streets and from the segment of society that, to this day, advocates their use. The "fragging" of officers was not born of the rigors of a fruitless, unjust war, as some say. Distaste for authority came from a permissive and indulgent society that allowed it to flourish.

Veterans' organizations are noble. I see their members in hospitals performing volunteer service for the bedridden. Veterans are noble. I know many of them. However, I prefer "veteran" as an adjective, not a label.



I make no apology for the wars I fought but never made, or for the time I spent in their pursuit. My memories are filled with comrades who did their best and moaned the least; who suffered, bled and survived, and some who died; and all the leaders who served as surrogate fathers to their men in taking them into battle and bringing them back, as many and in as good a condition as possible.

These warriors—their ranks are thinning—I will remember as men and comrades, the nobility of an often disparaged profession. They are not mere veterans, they are veteran veterans who have done the job over and over again.

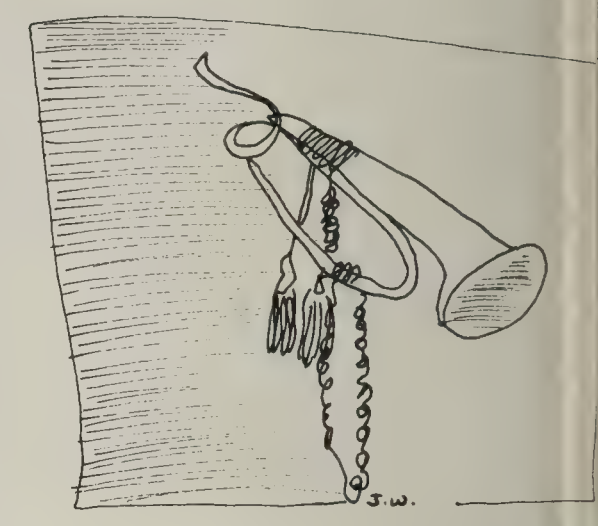
Next year, on some patriotic holiday, I may be caught downtown when the crowds begin to gather. I may see, again, an assembly of men, ragtag in the very trappings of the calling they chose to leave. I will know at once that they are veterans.

They will make me think of other veterans, veteran veterans, who, perhaps, at odds with their consciences, are asking, "Is it worth it?" Being veteran veterans they will say nothing in answer. Their service is their testimony; duty for duty's sake, duty for others too old, too young or too removed to care. □

COL. HENRY HENN, AUS, retired, works as a security specialist for a financial institution and is a free-lance writer. He served in the Medical Service Corps in World War II, and in the Korean and Vietnam wars during his 28 years as a reserve officer.

Modernization Means Playing Taps for a Noble Instrument

By Ted Blankenship



No doubt the last sound some of Maj. Gen. George Armstrong Custer's men heard when they met their fate on that June day in 1876 was the call of a bugle. After all, trumpets have been as much a part of the military as weapons almost from the beginning. Although only the Sioux warriors who survived could have told what really happened, it is reasonable to assume that bugles had a part in the action because they were about the only way a commander could communicate with his troops in those days.

It had been that way for a long time. Roman legions marched to trumpets and other instruments, and so did the ancient Greeks.

As recorded in the Book of Numbers, Moses was told to "make two silver trumpets" and sound the alarm when he went to war. Joshua had the sheep horns blown and the trumpets sounded before commanding the children to shout and bring the walls of Jericho "tumbling down."

Gideon used trumpets, too. He saved Israel from the Midianites, who, in one of their forays into Palestine, had murdered his brothers. He gathered 300 men and gave each of them a trumpet. They crept to the Midianite camp in the dark, and, on signal, blew all the trumpets at the same time. The terrified Midianite fled with Gideon behind them. He cap tured their two kings.

Col. James H. Wilson must have bee a student of the Bible, for he used th same tactics 3,000 years later to rout Cor federate troops in the Civil War. Co Wilson brought 250 buglers together o a foggy day during the battle of Fron Royal, Va., and they charged, all blow ing their trumpets at the same time. Ther was a "swelling volume of sound" fro all directions, and the Confederates brok and ran.

There was no problem rounding u 250 buglers then. Division had two, eac troop had a couple and so did regiment headquarters. Col. Wilson had ten reg



"I love the military mind and the military mind loves me."

ents in his division. They were all nec-
sary then because almost everything
as done at the sound of a bugle.
After reveille, the day's work began
ith stable call followed by calls for
eakfast, sick, water, fatigue and drill.
ounted units then heard boots and sad-
es. After dinner call there were water,
able and, at about 5:45 P.M., attention,
llowed by assembly. The troops then
l in for retreat. There were even calls
at signaled the start of school or church
d warned when to wear overcoats.
There was a final roll call—then tattoo
the artillery or taps in the infantry.
ps has not always been the call signal-
g the end of the soldier's day—or his
e. The last call was tattoo in the early
ys.
It originated in the 30 Years War, 1618–
48. It was sounded to stop the drink-
g of the troops every night. Originally
e call was "tap to," which means "close
e beer barrels." The provost hammered
e bungs in and chalked a line across
em to make sure they were not tam-
red with.
Tatoo is the longest call—28 measures
of which the first part is the same as
e French call for lights out. It served
e United States from the War of 1812,
nen the bugle first began to replace the
e and drum, until the Civil War.
It was replaced then because Maj. Gen.
niel Butterfield considered tattoo too
mal. In July of 1862, the Union Army
s encamped at Harrison's Landing on
James River in Virginia. The troops
d been through seven days of battle,
d Richmond was still ahead.
Gen. Butterfield, who commanded a
gade in Maj. Gen. George B. McClel-
's Army of the Potomac, called his bu-
r, Otis Norton, to his tent. He whistled
une, reading the notes from an enve-
e on which he had scribbled them. Bu-
r Norton listened, then blew them on
bugle. The two made a few changes,
l the general ordered the new call sub-
uted for tattoo that night in his bri-
le.
Those mournful sounds, strange then,
familiar today, became a hit in the
gade and then among nearby units.
mmanders sent their buglers to Otis
rton to learn the call. Later, permis-
n was given to substitute taps for the
ole Army of the Potomac, and even-
lly throughout the U.S. military. It
s so well received during the Civil
r that even the South embraced it.
Confederate Lt. Gen. Thomas J. ("Stone-
l") Jackson, returning from one of his
quent reconnaissances, was mistaken
the enemy and shot by his own pick-
Surgeons amputated his left arm and
was on his way to recovery when he
tracted pneumonia and died on 10
y, 1863.

As his body was lowered into the ground, gray-coated soldiers fired three volleys and the bugler blew taps—the call that ten months earlier a New York businessman turned soldier had scribbled on an envelope.

Those melancholy notes have pierced the air over many graves since then. And it has been the bugler's unpleasant task to blow them. The life of a bugler has never been easy. As always, buglers arose before the others, pulled extra duty at ceremonial occasions and, between musical stints, did other tasks.

In the Civil War, buglers and musicians helped surgeons with their grisly work. At other times they were stretcher bearers or fought beside the troops.

It was different after tanks and mechanized equipment began to replace horses, and whistles and hand signals superseded bugles for passing instructions to the troops.



The use of buglers continued into the Indian wars and through World War I, when horses were still important. They were used some in World War II, but other kinds of field communication began to take over.

The instrument itself had undergone changes over the years, but essentially it was a brass tube with a bell on one end and mouthpiece on the other. The tubing was wound around to shorten it and make a handle for easier carrying. Some were almost as big as a baritone horn and others as small as a cornet. Its name was changed to trumpet in 1923. Buglers since have been trumpeters, at least officially.

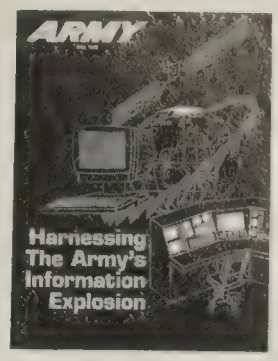
In 1943, the Army abandoned the traditional brass trumpet and tried an olive-drab plastic model that some trumpeters insisted had a better tone. At least the mouthpiece did not stick to the lips on a cold day. Besides, it saved two pounds of brass for cartridges.

Bugles are still heard at military installations, but they usually are recorded and set to play automatically. Real ones are sometimes used on special occasions, but they are usually the kind with three valves rather than a "tube" with no keys.

No longer is there a trumpeter who can blow 67 different calls and play such ditties as "Rip Van Winkle," "Holy Joe," "Soap Suds Row," "The Colonel's Daughter," "No Slum Today" and "I've Got Three Years To Do This In."

TED BLANKENSHIP is a free-lance writer based in Wichita, Kan. He was a newspaperman for 29 years.

Special Section on Information Management



Information—from how many of a company's troops are available for duty on a given day to evidence of the enemy's intentions in an approaching battle—has always been of vital importance to military forces. Timely, accurate data will always be a cherished resource of commanders in the field and those who conduct the Army's day-to-day management, but what happens when the service is confronted by an information explosion? Thanks largely to modern technology, this is precisely the situation the Army finds itself in today.

The answer, obviously, is not to cut down on the volume of information but to find ways to manage it in a manner that will provide maximum benefit to the users. To this end, the Army has formed a management system whose formidable mission is to establish order to a resource that has grown so much that the commander or manager tends frequently to become overwhelmed with information that is untimely, inappropriate and difficult to understand. The Army's assistant chief of staff for information management and some of his principal staff members describe the task that faces them in a special ARMY section starting on Page 30. *(Cover design by Tom Niemann)*

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FMC

Commitment to Personal Best s the Definition of Success

By Maj. George W. Smith Jr.

ne of the most difficult concepts to wrestle with as an Army officer is cess. Some of the benchmarks asso- ted with success are selection for res- nt command and staff college (CSC), talion command and promotion to onel. These are constantly reinforced d are consistent with Army perceptions what constitutes a successful career. The officer personnel management sys- n (OPMS) study showed that 64 per- t of the officers responding to the sur- felt that selection for command is single most important measure of cess. Officers have all become acute- aware of what success in the Army ans.

Although all officers aspire to achieve Army's success benchmarks, a large centage will not attain them. Only 40 50 percent of a year group will be se- ted for resident CSC. The number of tenant colonels selected for battalion nmand is limited to a very small num- in relation to an enormous list of eli- les. Only approximately 20 percent of ear group will be selected. The num- of officers promoted to colonel is erned by law and amounts to about percent of a year group. The odds do look good and become painfully evi- t as the years roll by.

These facts serve as a major source of appointment and frustration for many officers who are making significant tributions to the Army during the st productive periods in their lives. "nonselected" officers failures? Cer- ly not.

he officer corps, however, perceives at way and the Army certainly sends that message. As a result, many non- cted officers undergo a fundamental nge. Their pride is damaged, their formance drops and they become less mitted to the institution of which y once had high expectations. The re- y is that the Army offers an officer an rmous opportunity to be unsuccess- Something is terribly wrong.

attending CSC, commanding a bat- on and being selected for promotion colonel are not realistic expectations the majority of officers, a new suc- yardstick is needed. It would seem onable that promotion to lieutenant nel would be a good measure of suc- since approximately 70 percent of ers attain that grade but it is extreme- difficult to convince today's officer reaching lieutenant colonel rank is a lofty enough career goal within the current system.

A fundamental refocus closely aligned with professional commitment is necessary. Each officer should be a success if he is 100 percent committed to his profession, regardless of individual differences in ability.

Remember when we were lieutenants? We were not very well informed about OPMS, success milestones or the career track to follow in making it to the top. We pursued our jobs with vigor and gave 100 percent.

We were out to do our best and to make a contribution. The appreciation showed by our soldiers and the "old man" fueled our commitment to do even better. Our dedication and 100-percent commitment were self-sustaining.

However, as we gained seniority, we became more aware of what the success milestones were. Frustration undermined our commitment when many of us realized that we would not attain the goals that the Army said were important "quality cuts."

We need to display our "lieutenant commitment" throughout our careers and in so doing ensure personal success. Individual success in the Army should be determined by an officer's commitment to giving 100 percent in every assignment. This commitment must transcend promotion, selection for schooling, officer evaluation reports and personalities.

Stated simply, an officer is a success if he has done his best. In many cases, only the officer will know for sure since total commitment may not necessarily mean commanding a battalion or being selected for promotion to colonel. If an officer has done his best, he should feel comfortable that he is a professional and that he has come as close to realizing his full potential as possible.

A parallel can be drawn from sports. The ability to run fast is innate. Many gifted athletes can do well without enduring the maximum training sacrifice. They win most races they enter and receive much notoriety. Many less gifted athletes seldom win a race but train as hard as is possible. Their improvement and ability to close in on their full potential far exceed that of the gifted athlete; however, they are rarely recognized.

The gifted athlete wonders years later if he could have made it to the Olympics if he had trained harder. The less gifted athlete basks in fond memories of his commitment and contribution to the team. The retired colonel who reflects on what he could have done better rests less comfortably than the retired lieutenant colonel who gave it his all.

Officers who are not selected for resident CSC, battalion command or promotion to colonel are not failures unless they decide to be. The lieutenant commitment does not have to fade. The Army needs the dedicated professional who is committed to the Army regardless of the success "gates" he has hurdled.

Officers interviewed in this category were still enthusiastic about being in the Army and wanted to do their best to make a contribution.

The collective success of the officer corps would be profoundly influenced in a positive way if each officer viewed success in these terms.

The overwhelming majority would see themselves as successes and would be eager to serve their country for a full and rewarding career. Let us display the lieutenant enthusiasm and commitment, and remember that each of us is a success or failure unto himself. □

MAJ. GEORGE W. SMITH JR. serves as assignment officer for the military police branch, Army Military Personnel Center, Alexandria, Va. He holds a master's degree in criminology from Florida State University, Tallahassee, Fla.

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The Editors

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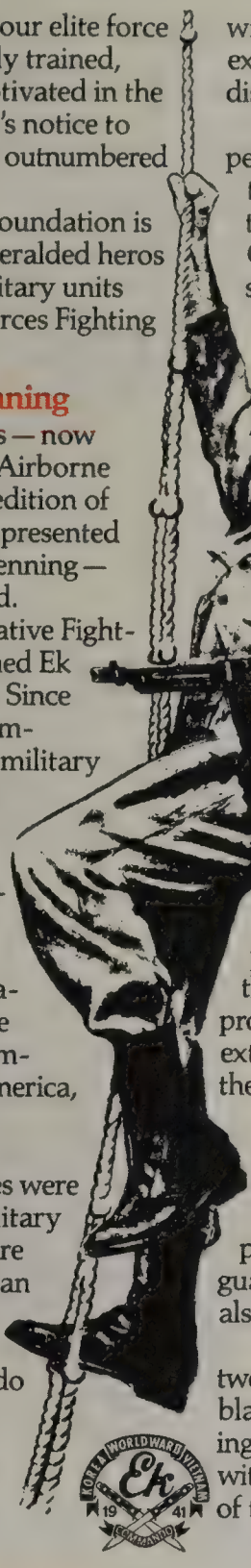
The Airborne Commemorative Fighting Knife is bench made by the Ek Commando Knife Company. Their motto is "Made in America, by Americans, for Americans" — and they mean it!

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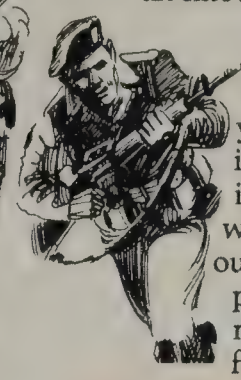
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The Airborne Commemorative Fighting Knife is shown with the optional display case. This is genuine solid mahogany routed to perfectly hold and display your knife. A sliding plexiglass lid protects the knife from dust and unauthorized handling. The case, which measures 14" × 5" × 1½", can be easily wall mounted with the two brackets provided.



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To place your reservation, you may call (a toll free number is available), use the reservation on this page or personally visit our headquarters. Satisfaction is guaranteed, or return within one month for a full refund. There are no shipping charges. For an additional $15 we will personalize your knife by engraving your name, rank, and serial number on the blade reverse. If you wish Airborne, Air Assault, Glider, Rigger, or USN/USMC jump wings etched on the blade reverse, just add $10.

When you place your reservation you will also be made a Member of The American Historical Foundation, and receive special information concerning the care and collecting of military arms and advance notice of all Foundation military projects. This is available exclusively through the Foundation.

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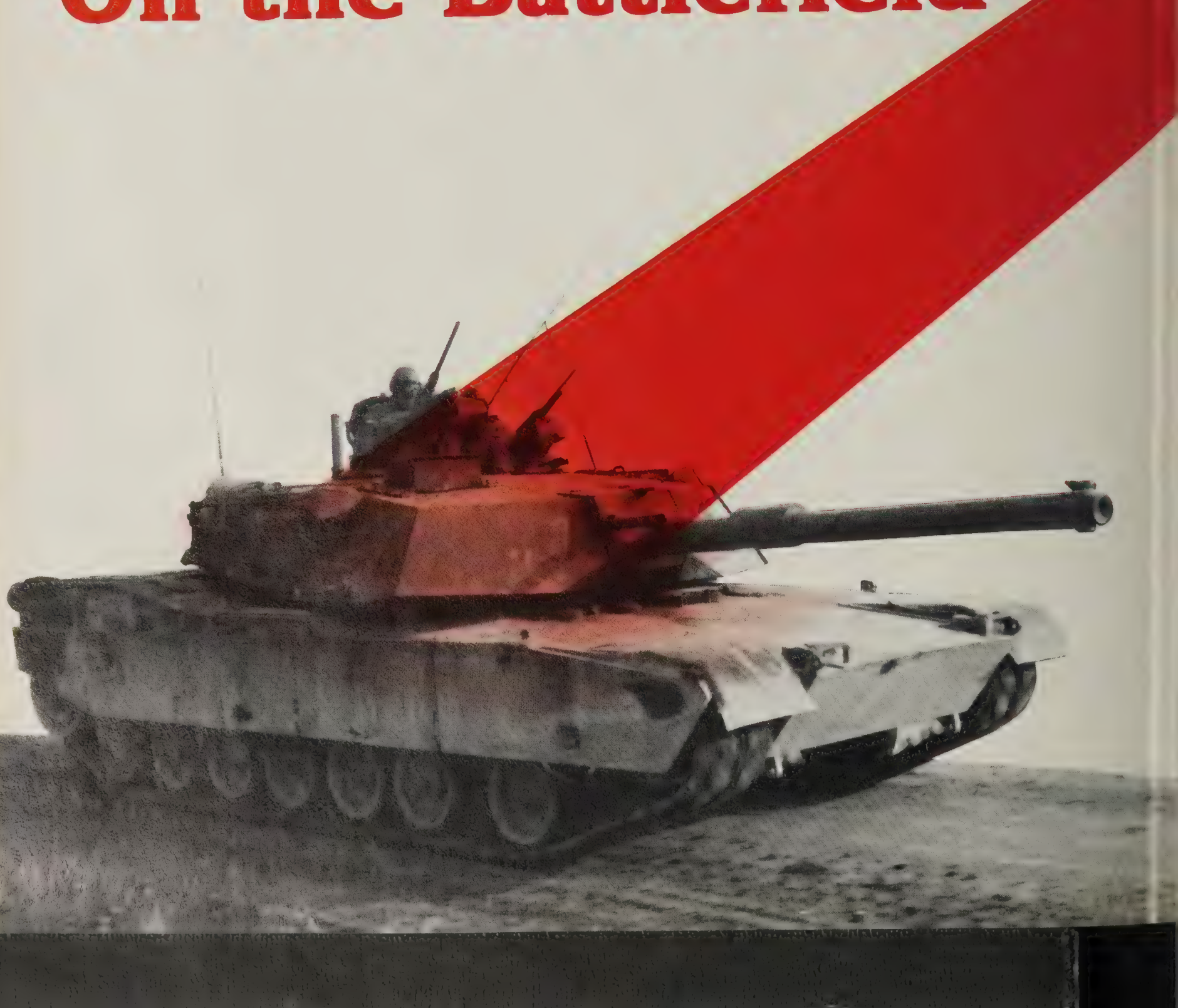
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Directed energy in the form of lasers, microwaves and particle beams shows great promise in developing the weapons future armies will use to fight, but it is important that those who pay for them and who will employ them understand what this energy is and what it is not.

Star Wars Weapons On the Battlefield



By Igor D. Gerhardt
and
Col. Peter Heimdahl

Since a warrior first used a rock to dispatch his foe, a primary principle of weapon design has n to maximize the destructive energy vered to the enemy. For centuries, the igner has worked within the realm of :hanical and heat energy not only to pel a warhead (catapults, rifles, howrs, rockets), but also to produce its ired effect on the target (high-velocity ;ments, concussion, high temperature).)uring the past 20 years, however, a nological revolution has been taking :e in the field of military weaponry. now technologically possible to beam ;e quantities of energy directly on a ;et with an emerging family of weapsystems called directed energy weap- (DEW). Beam-type weapons have n a part of science fiction for many rs, long before the related technolo- were understood. Now, what was e science fiction is becoming a reality. his entirely new concept of weaponry mises to give the military a new and roved battlefield capability. Some of directed energy technologies being eloped for possible weaponization inle lasers, radio frequency weapons h powered microwaves) and particle ms.

is very important for the citizens will pay for these new DEW systems and the soldiers who will operate them to understand what directed energy is and what it is not. For example, many observers believe that lasers, like the ones used by Darth Vader in the film *Star Wars*, can be the size of a pistol and burn holes through steel or even vaporize targets such as vehicles and soldiers. Current DEW technology is not capable of achieving these results.

A well-intentioned advocate for DEW can cause irreparable harm by overselling the capabilities of these emerging technologies, or oversimplifying the scientific and engineering hurdles that lie ahead. Without a realistic understanding of what DEW systems offer, it is impossible to plan for their use on the battlefield or make rational decisions for their development.

Directed energy is an aimed beam of electromagnetic energy or subatomic particles, such as electrons, protons or neutrons. The electromagnetic energy or subatomic particles are concentrated typically in a highly directional beam and deposited on a selected target. The energy transmitted can incapacitate a target in different ways.

Each DEW candidate is unique in the manner in which it interacts with and affects military targets of interest. In this regard, DEW are truly a family of weapons. They complement each other and will provide the battlefield commander with a capability to attack targets that cannot be engaged today by using conventional weapon systems.

The major advantage of DEW systems is that the electromagnetic energy or subatomic particles in the beam travel at or near the speed of light. The velocity of a bullet fired from a typical .30-caliber military rifle is around 2,800 feet per second. The speed of light is more than 350,000 times faster than that bullet. It may be difficult for many to appreciate what this really means in terms of military utility, unless this speed-of-light capability is translated into more meaningful terms.

A hunter who is trying to shoot a clay pigeon in flight must lead the target. He considers the time of flight of the shotgun pellets, the effects of gravity and drag on the pellets, and the speed of the target.

The hunter tries to estimate the approximate intercept point in space between the pellets and the target. This is the same type of geometry problem that must be solved by all conventional military weapon systems when engaging a moving target.

The target intercept problem, as applied to the military, is considerably more difficult because of the range to and speed of typical aerial targets. Very complex and costly fire-control systems have been developed to help solve this intercept problem for air-defense artillery guns. The effectiveness of air-defense guns against high-performance aircraft is limited primarily by this time-of-flight and intercept problem.

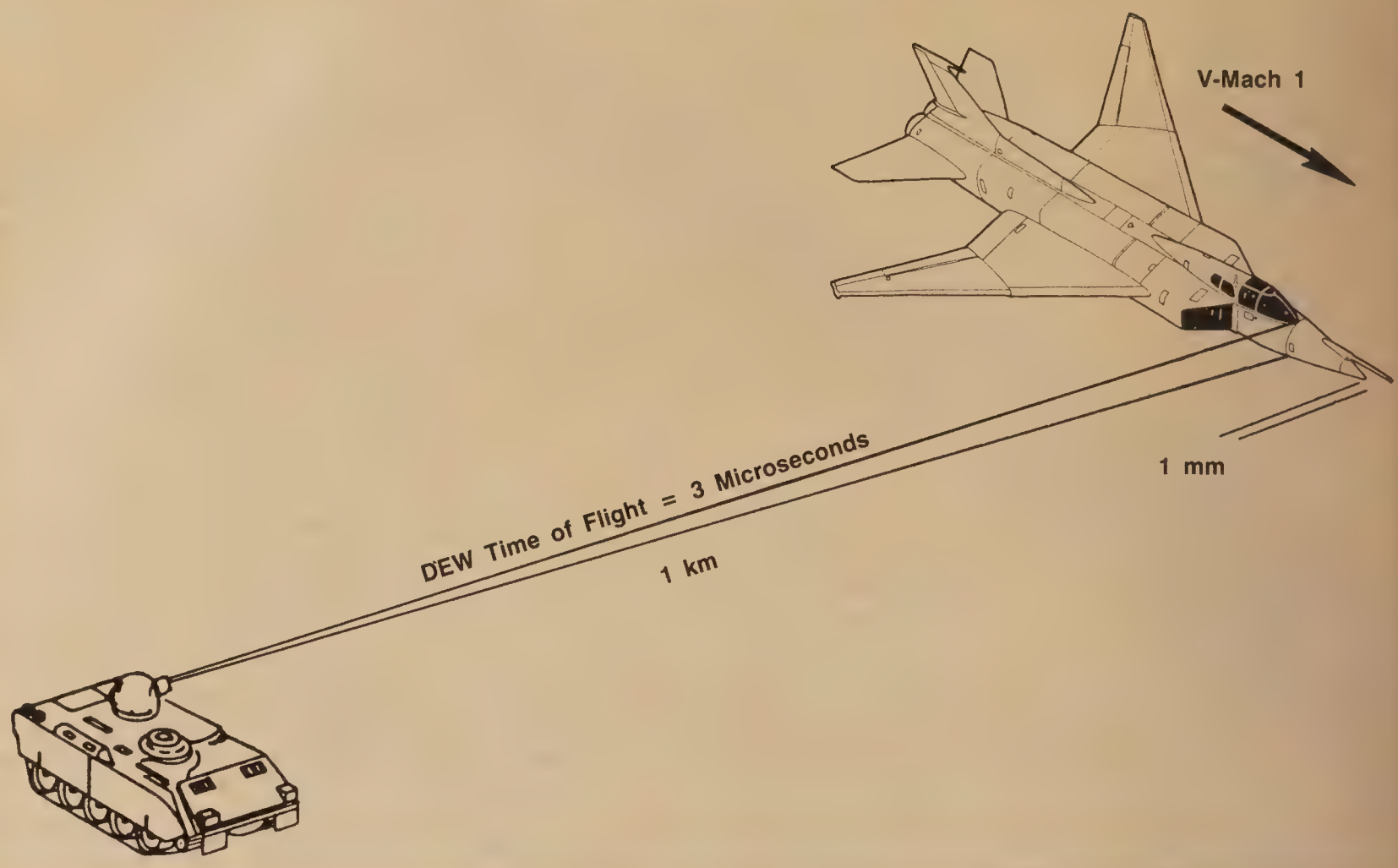
Most missiles, regardless of their speed in flight, track down the target by anticipating the target's flight path. "Smart" missiles carry an onboard computer to help solve the target-intercept problem. Unfortunately, the expensive onboard computerized tracking system is lost each time a missile is launched.

Compare the above target trajectory and lead problems with those of DEW. The energy of the DEW weapon is transmitted to the target at a speed of approximately 300,000 kilometers per second. For tactical engagements, it is almost like having a zero time-of-flight weapon.

Consider the following scenario. The directed energy weapon in Figure 1 is engaging a threat aircraft traveling at Mach 1 (the speed of sound—approximately 331 meters/second). During the time that it takes for the DEW energy to travel one kilometer to the target, the aircraft will have moved little more than one millimeter. This movement of less than a pencil-lead width has no measurable effect on target engagement.

Essentially what you see is what you get. Line-of-sight targeting with DEW is

Figure 1. Speed-of-Light Engagements



infinitely preferable to the current and marginally effective target tracking and intercept-engagement requirements for conventional air-defense weapons.

Engaging targets with a speed-of-light weapon means not only that the troublesome problems of trajectory and lead are eliminated, but also that targets can be attacked at greater ranges.

When the gunner of a DEW system pulls the trigger, energy is placed on the target almost instantaneously. This allows more opportunity to assess the effect of the attack and engage the target again, if necessary. An additional benefit lies in the fact that the enemy does not have the time to maneuver, take evasive action or activate special protective countermeasures.

The principal damage mechanism for lasers is the rapid and intense buildup of heat on the target. Lasers are generally classified according to the power transmitted from their exit apertures. The higher the output power of the laser, the more energy that can be deposited on the target in a given time.

The power output of a high-energy (or high-power) laser exceeds 20 kilowatts, which is the amount of power required to change an ounce of ice to steam in approximately four seconds. Typically, the output power of a high-energy laser weapon would be on the order of hundreds to thousands of kilowatts. A focused high-energy laser beam can produce temperatures that exceed those found on the surface of the sun.

Targets engaged by a high-energy laser become thermally overloaded, causing the irradiated area to weaken structurally or simply to melt. Lightly armored systems such as high-performance aircraft, helicopters and missiles are effectively attacked in this manner by high-energy lasers.

In addition to burning holes through thin metal structures, a high-energy laser can be very effective in attacking opt and electro-optic systems at militari significant ranges. Figure 2 depicts the e fect of high-energy laser radiation on t glass window of a tank's vision bloc The window is shown before and after b ing irradiated. The effect is called "cra ing" and is caused when too much las energy is absorbed on the surface of optical material. The heat buildup caus rapid melting and rehardening of the gla surface. The result is a frosted effect re dering the vision block virtually usele

Imagine an enemy tank with all of optics and glass surfaces crazed by hig energy lasers. Further, consider the fa that this effect can be achieved at rang exceeding those for routine tank-gun e gagements, and that an optical windo can be crazed in less time than is need to blink an eye.

Such a tank is no longer an effecti fighting machine. Its firepower and m bility have been reduced to the poi that the tank is now a vulnerable targ waiting to be engaged by more leth kinetic-energy munitions.

Low-energy laser weapons can al be extremely effective in defeating o tical and electro-optical systems. The fectiveness of a weapon system depen on the ability of its crew or the wea on system itself to acquire, track a

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IGOR D. GERHARDT is currently the manager of directed energy systems at a research firm in Huntsville, Ala. He has been closely associated with DEW concept and technical development and is the author of several articles for military journals as well as the principal author of the U.S. Army's tutorial "capstone" manual on DEW. COL. PETER HEIMDAHL, associate professor in the Department of Mechanics at the U.S. Military Academy, received a Ph.D. in theoretical and applied mechanics from the University of Illinois and served as a field artillery officer in assignments up to the level of battalion commander.

ccessfully engage a target.

Most weapon systems use some form direct-view optics or special indirect ewing optics such as image intensifiers, evision or infrared sensors. Optics that ew the battlefield can be attacked easily a low-energy laser. Laser radiation is nsmitted at a given wavelength. If the avelength is one which the optical sys- n is designed to accept ("in-band" to the tical system), the laser light is trans- tted through the system, focusing its structive energy on vulnerable detec- rs.

Most indirect viewing optical systems e designed to detect very small amounts a specific type of radiation. Therefore, ese systems are provided with magni- ng optics, to intensify the level of in- ming radiation.

However, optical and electro-optical sen- rs are not normally designed to accept high intensities of radiation achieved even low-powered lasers. As a result, ow-energy laser that is in-band to an tical or electro-optical system can per- nently damage the detector(s) of the stem at significant ranges or temporar- jam the system at even greater ranges. In the case of direct-view optics, the ector is the human eye. The psycho- ical impact on soldiers will be signifi- nt once they realize that viewing the ttlefield directly could produce flash- nding or permanent damage to the e. This ocular hazard will cause an en greater reliance on indirect viewing, ctro-optic sensors.

The question that needs to be answered arding the utility of lasers as weapons whether or not the target effects high- ted above are desirable enough to port laser weapon development pro- ms.

Radio-frequency weapons cause dam- by surrounding a potential target h an intense radiation field that can uce lethal voltages and currents into sitive electrical/electronic circuits. Most itary systems being fielded today de- d heavily on the use of electronics. mputers, communication systems and unhardened systems that incorporate grated circuits are particularly sus- tible to the effects of radio-frequency apons.

The effect of high-power microwave PM) radiation on electronic fuses in heads has caused considerable inter- within the research and development mmunity. Weapon fuses may be ren- ed inert by HPM radiation or may ger detonation. This raises a number of questions regarding the effect of HPM on electrical fuses in hand grenades, land mines, tank ammunition, missiles and bombs.

Subatomic particles fired from a parti- cle-beam weapon penetrate and damage a target in a manner similar to a conven- tional kinetic energy round. While the mass of each particle is extremely small compared to a conventional ballistic mu- nition, the velocity of the particles gives them considerable force on impact with a target.

After all, the kinetic energy of a moving body is related directly to its mass and the square of its velocity. A particle traveling at or near the speed of light can pack a consider- able punch.

In fact, the impact from these very small particles can produce a spalling ef- fect on the inside of an armored vehicle.

One additional effect produced by par- ticle beams is that they can create lethal secondary emissions (x-rays and gamma rays) from the interaction of the particles with the target material.

A particle-beam generator may appear to be the ultimate weapon, but there are a number of scientific and engineering problems to solve in order to bring this DEW candidate out of the laboratory.

The propagation of all DEW is affect- ed by atmospheric conditions to varying degrees. However, the influence of the atmosphere on DEW propagation is no more severe than it is on conventional active-target acquisition systems.

Just as a radar system can acquire a target that is otherwise hidden by limited visibility, an HPM weapon can engage a target that a laser weapon may not be able to attack. If a target cannot be ac- quired because of dirty battlefield condi- tions, no weapon system (conventional or DEW) is going to be very effective.

The behavior of directed energy is re- lated directly to the electromagnetic spec- trum, a simplified portrayal of which is shown in Figure 3. The traditional divi- sions of the spectrum, based upon specif- ic applications, are portrayed and will be referenced as they apply to directed ener- gy. The distinction between radio waves, microwaves, infrared radiation, visible and ultraviolet, x-rays and gamma rays is somewhat arbitrary and artificial. The only real distinction between these func- tional regions of the spectrum is the change in the wave length (or frequency) of the radiation.

The region within the spectrum in which each directed-energy weapon will oper-

Figure 2.
Crazing Effect of Laser Radiation on Glass

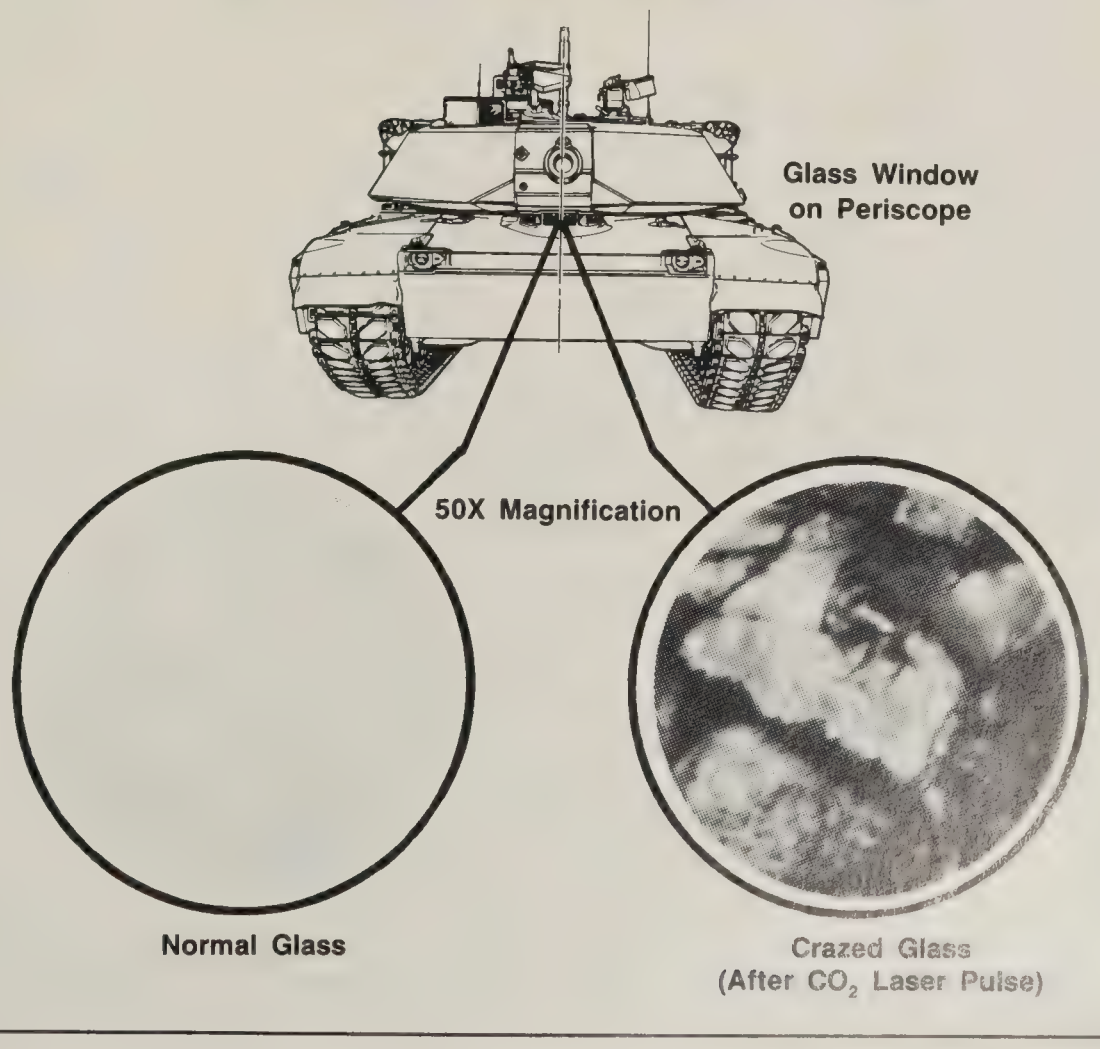
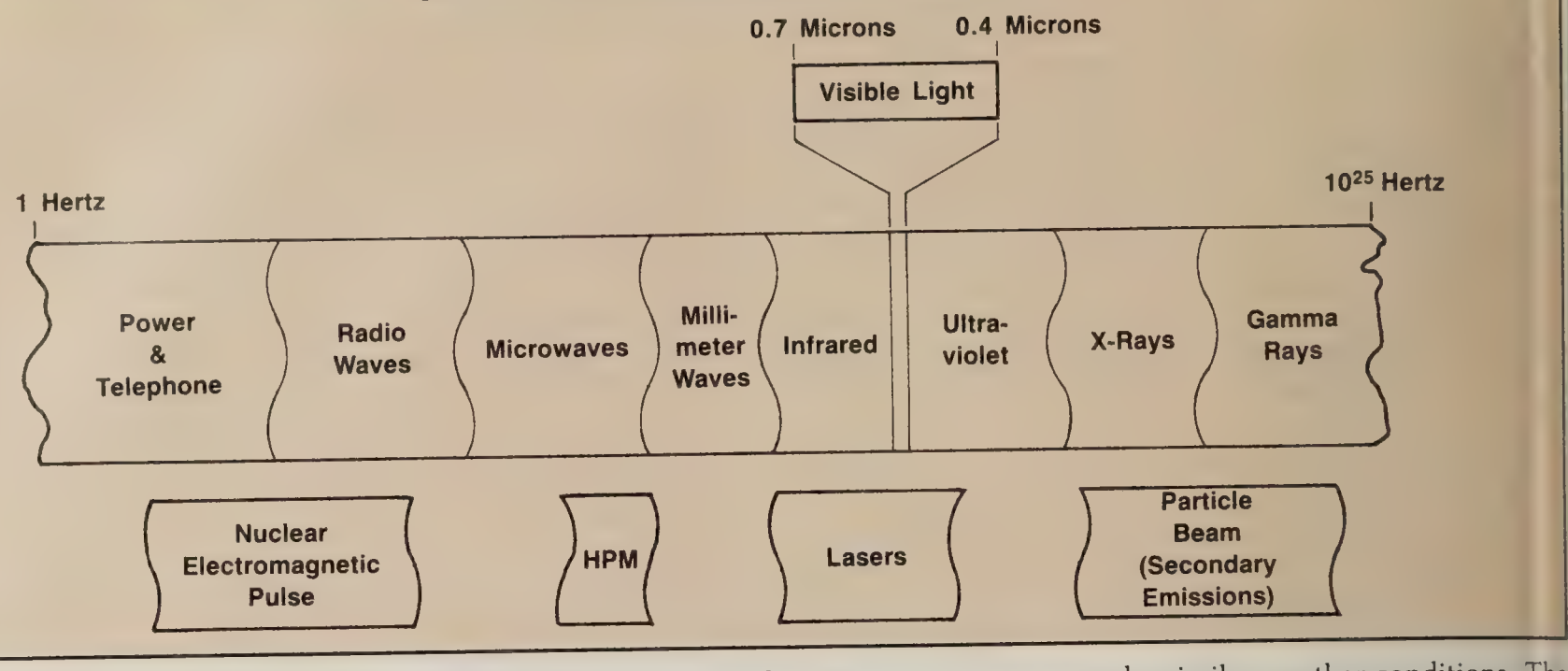


Figure 3. The Electromagnetic Spectrum



ate is also highlighted in Figure 3. While particle beams are not electromagnetic waves, the energy contained in a particle beam can be related to the energy contained in x-rays and gamma rays.

As the frequency of electromagnetic waves increases in cycles per second (Hertz) from radio waves to gamma rays, the energy content in the wave increases. The more energetic the wave, the more energy deposited on a target in a given time.

Hence, while radio waves continually pass harmlessly around and through the human body, even short exposure to x-rays and gamma rays can seriously damage human tissue.

The propagation of electromagnetic waves within the atmosphere is also related to their frequency or wavelength. In general, electromagnetic radiation having longer wavelengths propagates better, with less attenuation, than shorter wavelength radiation.

For example, radio waves, with wave lengths hundreds of meters long, propagate farther within the atmosphere than microwaves, which have wavelengths less than a meter; microwaves propagate farther than infrared radiation, with wavelengths measuring in millionths of a meter; and infrared radiation propagates farther than shorter wavelength visible or ultraviolet radiation.

As the wavelengths decrease to encompass x-rays and gamma rays, their ability to propagate in the atmosphere also decreases. Fortunately, the very energetic and lethal x-rays and gamma rays generated by the sun are absorbed in the outer layers of the earth's atmosphere.

Laser-beam propagation is dependent upon the wavelength and quality of the beam, the power of the laser and atmospheric conditions at the time.

During periods of good visibility, high-energy lasers can focus their radiation to burn holes in thin metal structures at ranges in excess of five kilometers, and damage sensors (in-band) up to 15 kilometers away. However, laser beams are affected by air molecules and particulates suspended in the air, such as carbon dioxide, water vapor, dust and smoke. During poor weather conditions, effective laser engagement ranges are substantially reduced.

Lasers that emit radiation in the visible portion of the spectrum (0.4 to 0.7 micrometers) can be observed easily when they laze in a contaminated atmosphere. This effect can be observed readily at laser light shows.

Laser light is visible from outside the beam only when contaminants in the air reflect light out of the beam path. The ease with which visible lasers can be seen and tracked to the source makes them less desirable for weapon applications. Using a pulsed laser beam would reduce this effect substantially. Nonvisible laser wavelengths in the infrared and ultraviolet range can also be detected; however, their detection requires special instrumentation.

High-power microwaves (HPM) can penetrate the atmosphere to engage aerial targets at ranges beyond the launch envelope of most Soviet air-to-surface missiles. An HPM weapon is very effective during periods of limited visibility, when other weapon systems are relatively ineffective. The HPM's ability to penetrate a somewhat dirty atmosphere permits it to complement the limited propagation of a laser or particle-beam weapon under similar weather conditions. The increased beam spread (divergence) of the HPM weapon enhances its ability to engage targets, when the extreme accuracy required by other DEW systems cannot be achieved.

In space applications (exoatmospheric), a particle beam propagates well; however, the beam must be neutral in order to avoid the adverse affects of the earth's magnetic field on charged particles. Subatomic particles from a particle-beam generator do not propagate well in the atmosphere (endoatmospheric) without considerable help. This is true regardless of whether the particles are charged or neutral.

Even though the earth's atmosphere is inhospitable to the propagation of any particle beam, there is still considerable hope for the tactical particle-beam weapon. Particle-beam propagation within the atmosphere can be improved substantially by using a charged particle beam and clearing an ionized path in front of the beam using a high-powered laser or HPM. The propagation range of the particle beam is enhanced as a consequence.

One major factor that favors the development of DEW is the fact that they do not require the enormous and costly ammunition logistics system associated with all conventional weapon systems. A DEW system consists of a transmitting device powered by a generator. In essence, the "ammunition" for DEW is created as needed in the form of electromagnetic energy or subatomic particles.

Fuel is required to operate a DEW weapon system. However, the increased fuel requirements to support DEW are relatively insignificant when compared to the task of providing conventional am-

unition on the battlefield. The time, anpower and cost associated with de- ning, manufacturing, storing, handling, nsporting, shipping, guarding and main- ning ammunition are eliminated.

Consider the unique storage facilities ilt to safeguard conventional ammuni- n at controlled temperatures and hu- dity and the requirements for special nsport vehicles, ships and ports.

If the costs associated with the conven- nal ammunition logistics process were ded to the cost of the weapon system y support, DEW systems could be a l bargain by comparison. In addition, those officers and soldiers who have sponsibilities in ammunition resupply, prospect of reducing the stockage re- irements in ammunition dumps and pots should be very attractive.

Within the foreseeable future, DEW stems will complement conventional apon systems on the battlefield but t replace them. DEW are limited cur- ntly because of their inability to engage types of military targets. Therefore, nventional weapon systems will con- ue to perform a vital task in combat the foreseeable future.

The integration of DEW and conven- nal weapon systems will have a syner- tic effect when engaging targets. The d space associated with minimum en- gagement ranges for many conventional weapon systems can be covered easily by DEW. In addition, DEW will extend the range for target engagement and allow more opportunities for conventional weapon systems to engage targets.

Lasers that are in-band to the human eye will generate a greater dependence on indirect viewing techniques to locate and engage targets. Aircraft pilots will become much more dependent on electro-optic sensors to view the battlefield and be forced to fly in a manner that makes them more vulnerable to attack by conventional weapon systems.

Directed energy weapons have been receiving a lot of attention recently in the press and in Congress. The DEW application enjoying the most visibility is the possible strategic use of these new and revolutionary weapons. The President's strategic defense initiative (SDI) calls for the introduction of special defensive systems in space. Among the candidate defensive systems being evaluated for possible use in space are DEW.

Using DEW in space could provide the United States with a new capability to defend against space-based offensive weapon systems and intercontinental ballistic missiles (ICBMs). Space applications for DEW may be a highly desirable goal, but the long-term strategic perspective is overshadowing the near-term development and fielding of *tactical* DEW systems. The possibility exists now to capture current state-of-the-art technology in directed energy and to field weapons for use on the battlefield within the next decade.

Unfortunately, the DEW technology requirements in space are not the ones needed for a tactical battlefield. While the basic physics associated with tactical and strategic DEW are the same, the differences in engineering application are significant. The shorter wavelength chemical and excimer lasers that are desirable for use in space do not penetrate the lower atmosphere to satisfy tactical applications.

On the other hand, the lasers with longer wavelengths that propagate best in a tactical environment are impractical for use in space because of their inherent larger beam spread. In addition, the power and packaging requirements are very different. The box on Page 28 compares technical and operational parameters for tactical and strategic high-energy lasers.

The differences between tactical and strategic DEW can be likened to the differences between a 9-mm pistol and a 16-inch naval gun. Both use technology based



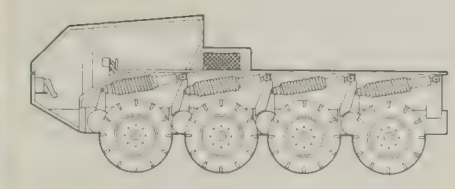


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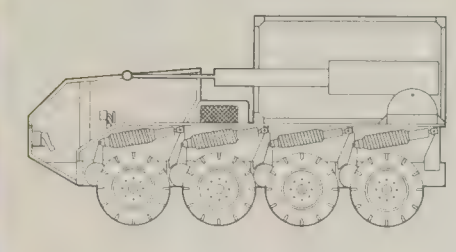
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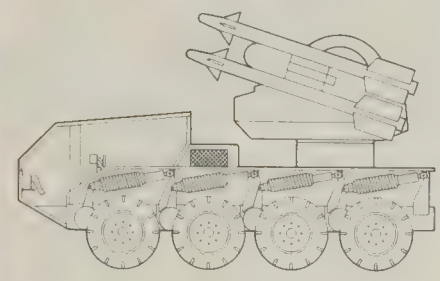
Existing applications of the Standard Tactical Vehicle currently under development or in production.



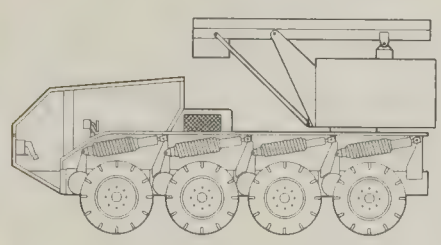
8W12 Standard Tactical Vehicle (STV)



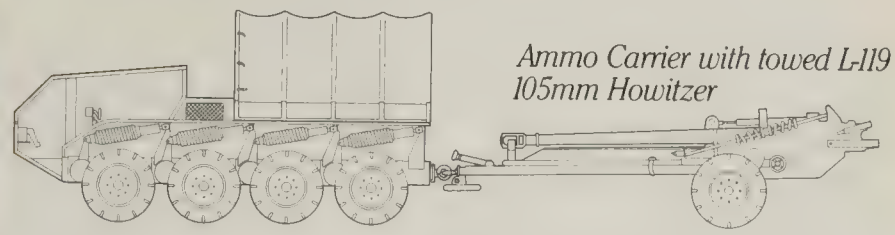
C³I Vehicle



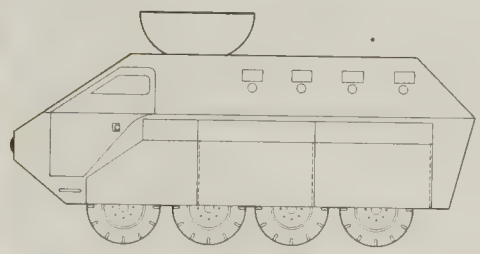
Rocket/Missile Carrier



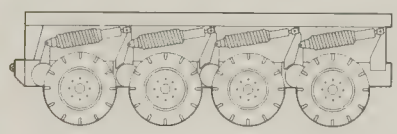
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he Standard Tactical Vehicle (STV) represents a family of versatile ulti-role tactical vehicles built around our revolutionary 8W12 Trailing rm Drive (TAD) Undercarriage concept. The STV is now performing a ide range of combat missions in an almost endless number of vehicle nfigurations: from the U.S. Army's Vulcan Wheeled Carrier (VWC), transport vehicles, to radar systems, to mobile rocket and missile stems, and more.

The key to the STV's superior all-terrain capability is Standard anufacturing Company's unique Trailing Arm Drive (TAD) Under- rriage. The TAD design features an 8-wheel independent suspension stem coupled with hydrostatic trailing arm drive and braking.

Our TAD design puts hydraulic cylinders and a trailing arm at each heel's spring shock mechanism. A single, direct cylinder control allows e operator to raise or lower any wheel, or any combination of side or id wheels independently from others. The overall vehicle profile can e raised or lowered by 12", allowing for ease of air transportability and much reduced silhouette when emplaced.

The trailing arms to each wheel are jointly driven from a gearbox mmon to each side which provides optimum torque to each wheel at l operating speeds. This *all wheel drive* means continuous *all wheel wer.* While conventional vehicles are shifting gears, or locking out the fferential, or switching to 4-wheel drive, the STV with Standard's TAD in gear and on the run.

And being in gear and on the run is where Standard's STV is at its best: traveling at speeds up to 45 M.P.H. over battlefield terrain that could stop a conventional vehicle in its tracks. It can negotiate side slopes and inclines of 60% and greater, depending on available traction. With the front and rear end wheels raised to shorten the wheelbase, it can make 360° turns twice as fast as most other vehicles. And it can negotiate vertical step obstacles up to 24" high.

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Comparison of Parameters For Tactical and Strategic High-energy Lasers

Characteristic	Tactical	Strategic
Primary targets	Missiles Aircraft Optics Electro-optics	ICBM Satellites Bombers
Wavelength regime	Visible/infrared	Ultraviolet/x-ray
Range to targets	Kilometers	Megameters (1)
Output power	Kilowatts	Megawatts
Aperture (mirror) size	Centimeters	Tens of Meters
Pointing accuracy	Microradians (2)	Nanoradians (3)
Packaging	10s–100s of cubic feet	1,000s of cubic feet

(1) One megameter equals 621.4 miles
(2) Diameter of a pencil lead at one kilometer
(3) Diameter of a fine human hair at one kilometer

upon the same physical principles, but the two weapons have very different applications. Consequently, one cannot use the 9-mm pistol to satisfy the requirements established for a naval gun. Tactical DEW programs will suffer as long as decision makers fail to recognize the significant differences that exist between tactical and strategic DEW.

Some benefit to tactical DEW technology will be realized as a result of SDI-related developments in adaptive optics, pointing and tracking, and systems engineering and design. However, development and acquisition programs for tactical DEW will not benefit substantially from the growing support and research in SDI.

One reason for the apparent lack of interest in tactical DEW is that very little information on battlefield applications gets to the public because of the cloak of security and mystery surrounding these technologies. In fact, the security classification of much of the work in DEW is such that even military planners do not have immediate access to information on directed-energy technology. The problem of overclassification of directed energy related information is a serious one. In some instances, the basic physics are being classified, thereby restricting discussions of the general applications for a DEW candidate. Those who develop concepts for DEW integration and use on the battlefield must have ready access to basic DEW information.

The Army has an opportunity to make a giant leap forward by seizing this new technology and gaining a distinct advantage on the battlefield. However, there is danger that little or no action will be taken and the advantage will be forfeited to our adversaries as a result.

The acceptance of a new concept or weapon system can be a time-consuming process. The tank was not immediately accepted by the Army, even though it showed great promise during its first use in battle during World War I. The horse cavalry was still in use during the early stages of World War II.

Integrating DEW into the Army force structure will not be an easy task. Very little is known throughout the Army about DEW technology or its potential on the battlefield. The Army school system and doctrinal literature do not address DEW.

An educational process is needed to familiarize officers and soldiers with this new technology. Concept and doctrine developers must understand how DEW systems operate and what their capabilities and limitations are.

Another issue of great importance is overcoming the mindset that every weapon system must punch holes in targets. The "crash-and-burn" requirement that many place upon every weapon system does not recognize the unique potential and utility of DEW. While high-energy lasers and particle beams can produce holes in targets, there are many other beneficial target effects produced by DEW.

Some observers would argue that a tank with frosted vision blocks is still an effective vehicle and weapon system or that damaging electronic circuits in an enemy missile may not guarantee a miss or system kill. This is a very important issue that must be addressed. It is essential that we decide what target effects are desirable and acceptable and whether or not they are worth the cost.

One of the difficulties encountered by materiel developers when working with a new weapon system is the desire on the part of the combat developer to achieve the ultimate weapons capability. In this case, the old saying that "the best is the enemy of the good" applies, and can result in the death of good programs.

If we require that a weapon system be all things to all people and reach perfection during the first production run, then unrealistic expectations will kill the weapon development program before it even gets started.

DEW development will have to take place in stages. Experience is needed with prototype weapons and early production models in order to proceed intelligently to the next generation of more capable DEW systems.

The last and most important issue deals with the major ingredient in any materiel acquisition program—funding. Realistic funding levels for Army tactical DEW programs are required to produce credible results. Current levels of funding are sufficient to keep only the most modest DEW development programs alive.

Little or no growth is possible in this very promising high-technology area without considerably more support. Consideration should be given to long-term research and development funding for selected DEW programs. In these instances funding could be approved to cover an entire development period. For example, a system approved for the concept exploration phase of the materiel acquisition cycle could be funded to Milestone I. As long as the program is on time within cost and meeting performance criteria, it would remain free of outside interference—a funding procedure which would have the benefit of allowing the project engineers and managers to concentrate on system development rather than constantly preparing to justify the annual budget.

Truly innovative management techniques are going to be required. What capabilities do we need on the battlefield in the next 20 years? It is not merely a question of this year's defense priorities, but the thrust of the Army's weapon development program. It is hoped that the people who are addressing this question in Congress and in the Army know enough about DEW to make the right decision.

It is important to ask what these new weapon systems will cost if we decide to develop them, but it is far more important to ask what it will cost if we do not develop them.

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With the Army's capacity to generate information threatening to overwhelm the ability of commanders and managers to apply it, the service is organizing to effect a merger of communications, automation and publishing that will treat information of all kinds as a managed military resource.

Mission: To Bring Order To Information Revolution

By
Lt. Gen. David K. Doyle
and
Ronald E. Craven

The constant plea of the commander or manager on the battlefield or in the corporate boardroom has been for more and more information. Today's technology can generate, process, transfer and store information in quantities never before imagined. It is not unusual for the commander or manager to be overwhelmed with information that is untimely, inappropriate and difficult to comprehend.

Along with personnel, information is probably the Army's most precious and perishable resource. Without information that is timely, relevant and understandable, commanders and managers at all levels cannot make sound decisions nor can their staffs make helpful recommendations.

On 9 May, 1984, Gen. John A. Wickham Jr., chief of staff of the Army, took the first of many steps to improve information management. He approved the establishment of the information mission area (IMA). This decision brought together and integrated the subfunctions of the IMA—telecommunications, automation to include office automation, audiovisual, records management and publication.

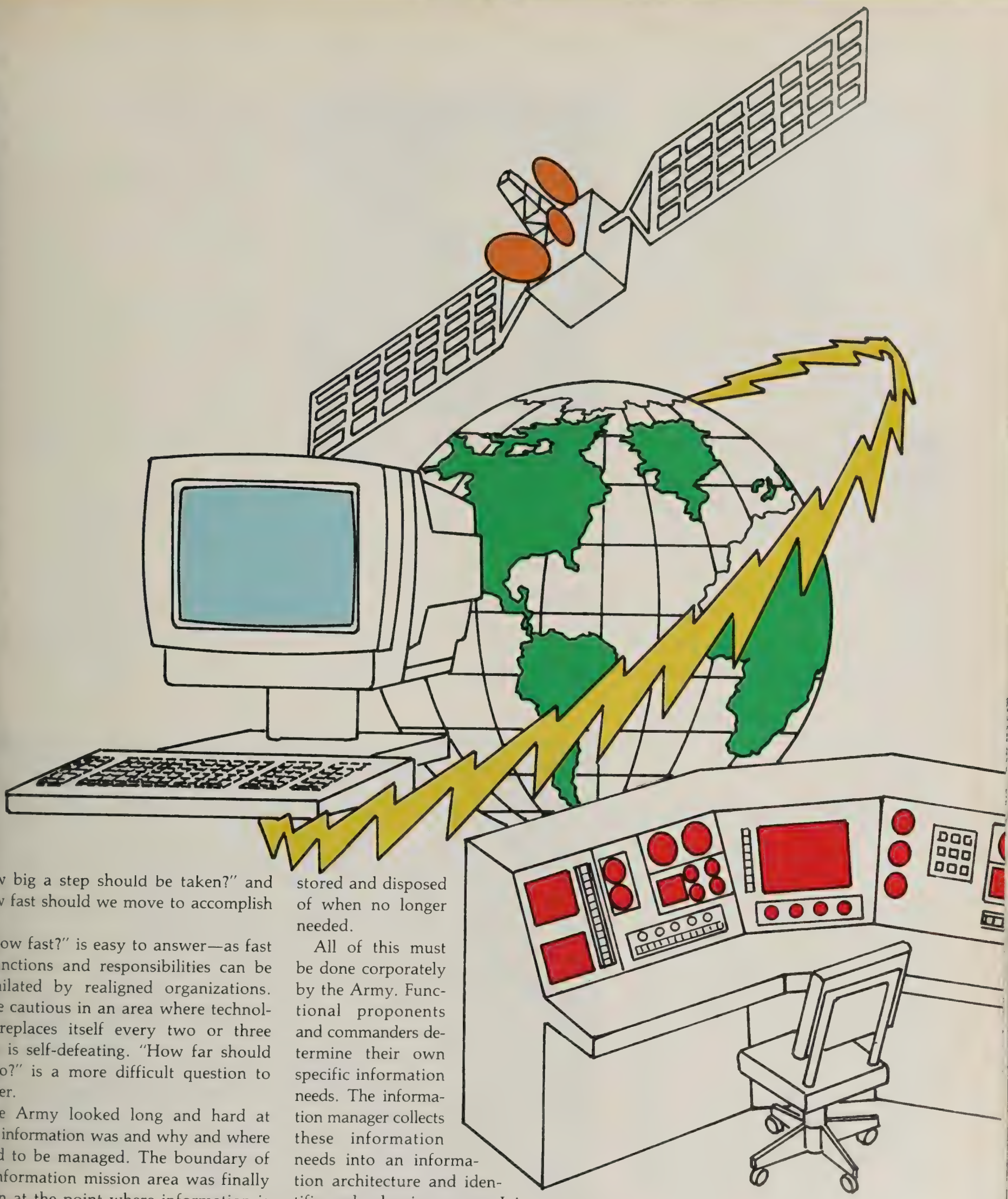
The merger of these once separately managed functions promises a far greater return on the Army's investment in the area of information. It also signals sweeping changes in how information is managed in the Army.

For years, the Army has been wrestling with how to manage information most effectively. While studies were conducted and various organizations attempted it, none accomplished the job. The introduction of more technology with greater potential made it even more critical that the Army learn how to manage its corporate information. It was the acknowledgment that the real need was better management and not more sophisticated technology that provided the key to this breakthrough.

While users knew that new technologies had been coming in at a faster rate they had failed to notice that few technologies, if any, were becoming obsolete. In a sense, the proliferation of technologies was overwhelming the user.

A common direction and a set of comprehensive priorities in the information area were needed to focus the Army's allocation of resources and energies. Currently, a management system with the necessary scope and authority was also required to bring the various pieces of the information world together.

Industry, academia and the public sector all face the same challenge. Their biggest concern has also been the Army



ow big a step should be taken?" and ow fast should we move to accomplish

'How fast?" is easy to answer—as fast functions and responsibilities can be imilated by realigned organizations. be cautious in an area where technol- replaces itself every two or three rs is self-defeating. "How far should go?" is a more difficult question to wer.

he Army looked long and hard at at information was and why and where ad to be managed. The boundary of information mission area was finally wn at the point where information is ated and where it becomes available the Army to use. The distinction is ween who determines the content of information and who manages it.

or example, personnel managers deter- ie what information the Army needs successfully manage people. Informa- managers, on the other hand, deter- e how this information should be col- ed, processed, transferred, presented, stored and disposed of when no longer needed.

All of this must be done corporately by the Army. Functional proponents and commanders determine their own specific information needs. The information manager collects these information needs into an information architecture and identifies redundancies or gaps. Initiatives to fill these voids then receive the higher priority. Redundancies become part of the "bill payers" for these new initiatives.

The Army's information manager is the assistant chief of staff for information management (ACSIM), a principal Army general staff position. Each level of command down to installation level and separate organization should have an information manager on its staff.

At the major command (MACOM) level, this would probably be a deputy chief of staff for information management (DCSIM); at installation level, a director of information management (DOIM); and in a small field operating agency, a part-time information manager. The newly created U.S. Army Information Systems Command (USAISC) is the "sys-

tems manager" and supports the commander when and where appropriate.

The still unanswered question is "How far should we go?" Was it really necessary to bring together all five functions of the information mission area? For years, technology has made it obvious that the merger of telecommunications and automation was only a matter of "when" and not "if." While they are the most visible of the five functions, they are not in themselves the information mission area. Again, technology came to the rescue. The technology of all five functions is essentially the same.

Records management is the essence of information management. The format, form, terminology dictionaries, literary rules and disposal instructions have been used by the Army for some time. The standards are the same as those used by "automators," communicators, "audiovisualists," publishers and printers. They may be called something different, but they serve the same purpose.

Telecommunications is the process that transfers information as data, images or sound. Large communication switchboards use embedded computers to assist in the speedy transfer of information.

Automation is widely used by people in various fields. In an office environment, a computer may be used as a word processer. It was determined early on that distinctions drawn between automation and a fast-growing application, office automation, were no longer viable.

While the printed word has historically been the domain of publications and printing, automators and communicators have been producing printed material in great volume. Publishers and printers, on the other hand, have routinely employed sophisticated automation and communications technologies and state-of-the-art audiovisual means to get their printed "word" out to the user. At 13,000 pages per person a year, the Army printer has been busy. (Just think of the records management work load that has been created.)

The explosion of technology in the area of information has created a situation where the commander or manager finds himself in "information overload." Decision makers find themselves relying on their intuition when making timely decisions.

Audiovisuals, presentations of information in audio and visual media, take on great importance if used correctly.



Lt. Gen. David K. Doyle

Condensing reams of written information into several well-constructed visual aids has been a technique used by Army trainers since the days of Valley Forge. In the world of modern information management, the audiovisual function is essential.

The five functions of the information mission area can be managed without threat to the proponents of other functional areas. Information management crosses all other functional areas in the sense that it pulls together information requirements and serves to fulfill these requirements as efficiently and effectively as possible from an Army perspective.

The commander, manager, clerk, action officer and budget analyst should be able to go to their standard "work station," instead of five different types of terminals, telephones and printers, and get the information they need to make their decision or to develop their recommendation. How their information is transferred and where it is processed will be obvious to them. Even more important, if two people ask the same question about the same topic, the goal is to get the same answer.

Getting the same answer to the same question is a reasonable but almost unattainable goal today. The lack of an Army corporate data base is the reason Herculean efforts are being made to correct this management deficiency.

The Army corporate data base will be a series of interactive data bases that collectively contain all (and only) the information the Army needs to command and manage in peacetime and in war. The in



rmation it contains will have been de-
loped in response to validated infor-
ation management requirements. It will
disciplined by the vigorous enforce-
ent of information standards down to
e data element level of detail.
Getting to this point will take years of
ort as the "rules" that bring it about
e developed, fielded and enforced. The
hnical configurations that describe how
e objective information architecture is
ieved will also help to set the specific
orities and goals of the information
nagement plans, programs and bud-
s.
Information as a resource is becoming
re important as each day passes. As
reliability and availability improve,
overall worth increases. The increase
management efficiencies and effective-
s is the payoff—the return on the in-
tment. It comes at a cost that is not
ely described in dollars and manpower.
The greatest cost is the discipline nec-
ary to follow a common Army course
action based on the Army information
hitecture. Commanders and managers
all echelons must be convinced to fore-
go the technical "quick fix" that does not comply with the information architecture and standards. They must be as willing to comply with information architecture and standards as they are to follow standard fire commands, supply procedures and tactics.

Conversely, the Army must be responsive to the information needs of its commanders and managers. This responsiveness is not just an information manager's responsibility. Rather, it is an Army responsibility. Training and Doctrine Command, for example, is responsible for the development of information doctrine, combat developments and organizations. Army Materiel Command is the primary information materiel developer. Army staff functional proponents also play a big role in refining their information needs and integrating them.

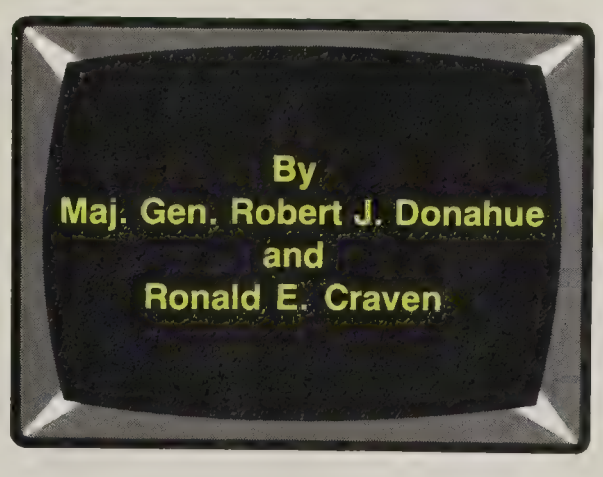
The Army has clearly identified an important area of management, the information mission area, and is committed to a course of action to implement it. Many of the questions have been answered. The direction in which the Army needs to move to better manage its information resources is now evident.

Traditional procedures and parochial interests in the information area are liabilities the Army can ill afford in a period of decreasing resources and increasing expectations. Change does not occur easily, but it must occur if challenges are to become opportunities to perform faster, smarter and at less cost. The mid-1980s are exciting, and information management is one of the reasons why.

LT. GEN. DAVID K. DOYLE is assistant chief of staff for information management, Headquarters, Department of the Army. He has held various command and staff positions in the United States, Vietnam and West Germany. From July 1983 to March 1984, he served as chief of staff, U.S. Army Forces Command. RONALD E. CRAVEN is the special assistant for reorganization in the Office of the Assistant Chief of Staff for Information Management. A graduate of the Army War College, he holds a master's degree in public administration. He assisted in writing this series of articles.

der Assistant Chief of Staff

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anagement is accomplished through policy, organization and resource allocation. While ch of the managing of information in port of the newly established informa- mission area will be done through v, integrated information policy and allocation of resources, the most ob- us changes will occur in organizations. realignment and integration of the functions of the information mission a will cause a certain degree of trau- in many existing nondeployable or- izations throughout the Army.
he highly dynamic nature of infor- ion management, the perishability of rmation and the scarcity of resources e made it necessary to institute a cen- ized management system that will, ul- ately, lead to decentralized execution decisions in the field.
t the Army general staff, the infor- ion manager is the assistant chief of f for information management. The SIM leads a lean organization of ap- ximately 200 people who have the sion of ensuring that the Army in- formation mission area goals are accomplished.

The organization of the Office of the Assistant Chief of Staff for Information Management (OACSIM) is illustrated in the chart on Page 35. The OACSIM is headed by a lieutenant general with a deputy ACSIM, who is a major general. The five directorates of the OACSIM provide Headquarters, Department of the Army (HQDA), guidance and policy on the IMA and work closely with external agencies which influence the Army's information management program.

The Futures and Concepts Directorate has the responsibility of exploiting information technology and management breakthroughs in academia, industry, the public sector and the Army. The directorate evaluates or prototypes them if necessary before sending useful findings to the appropriate organization.

The Architecture Design and Control Directorate is where the Army's information architecture is developed, the broad technical configurations are identified, and the implementing plans and directives are issued. This directorate establishes Army information mission area priorities from the corporate Army information requirements.

The Policies and Strategies Directorate has many functions. The development of integrated information policy and standards is its major responsibility. It also develops the training and acquisition strategies in an oversight role, and ensures that integrated doctrine is developed.

The Organizational Integration Directorate has responsibility for ensuring that all new information organizations are equipped, manned, organized and sus-

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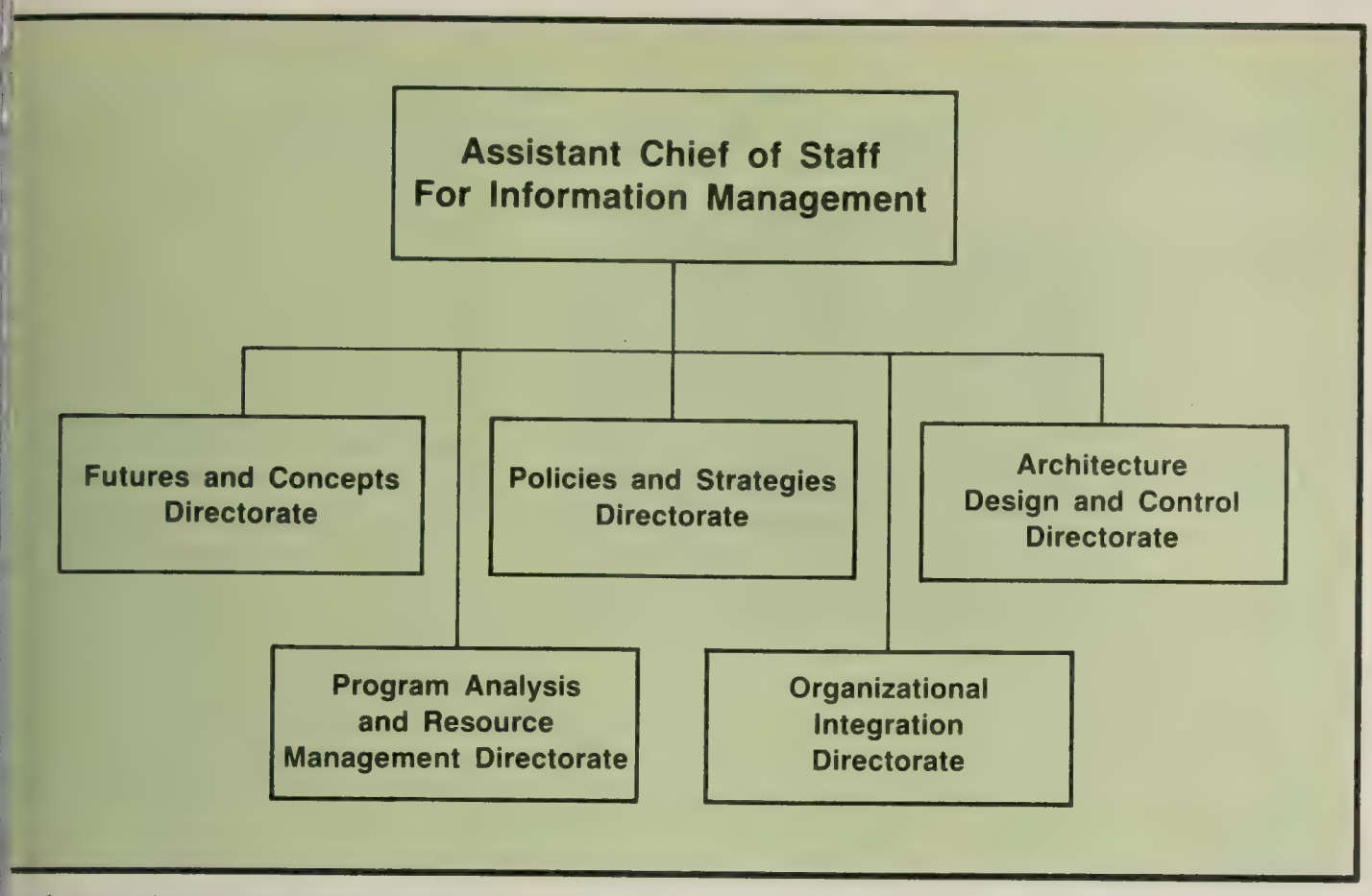
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ned properly. It also provides the HQ-
A level management of information sys-
ns that are being fielded as part of the
my's force modernization program.
The Program Analysis and Resource
nagement Directorate translates the
ormation planning requirements into
egrated and balanced information re-
rce programs and budgets. Their anal-
s will reflect how adequately the Ar-
provides resources for its informa-
n mission area priorities.

At the major command level in the field, the information manager is a staff principal with responsibilities identical to those of the ACSIM. At the installation level, the ector of information management is a ff principal in the newly announced rison Standard Installation Organiza-
n.
The information manager has both an egrated information management staff onsibility and that of supervising and egrating the operation of information ivities such as data processing instal-ons, telecommunications centers, au-visual support activities, records hold-areas and printing plants.
n separate organizations, such as field rating agencies and at command lev-between MACOM and installation, information managers have a title ap-priate to the organization. To the ex-t possible, they have responsibilities roring the MACOM deputy chiefs of f for information management and allation DOIMs.
The U.S. Army Information Systems Command was established in May 1984 from the assets of Army Communications Command, Computer Systems Command and several other smaller elements. It operates and maintains assigned information systems in the areas of telecommunications; automation, including office automation; and audiovisual.

At the MACOM, installation and at whatever level it is appropriate, USAISC personnel serve as both the supported organization's information manager and commander of the USAISC element. Over the next several years, all telecommunications automation, to include office automation and audiovisual assets, will be transferred from the supported organization to USAISC.

At the HQDA level, the Adjutant General Center (TAGCEN) provides operational support to the OACSIM staff. TAGCEN is responsible for the promulgation of OACSIM information policy, goals and objectives to the MACOM deputy chiefs of staff for information management in the areas of records management and publications and printing.



Maj. Gen. Robert J. Donahue

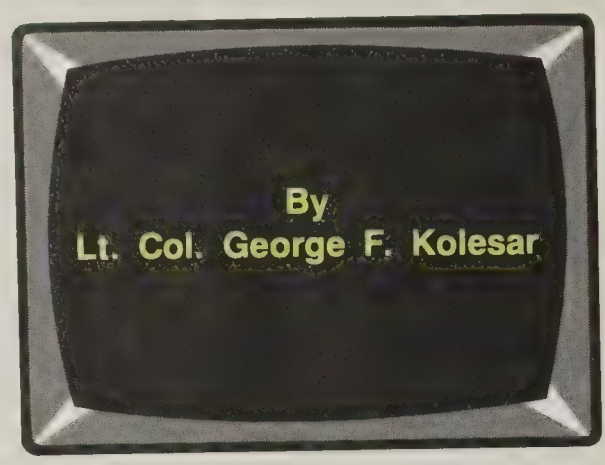
Training and Doctrine Command is looking at how the establishment of the information mission area may affect the tables of organization and equipment of deployable Army units. No immediate changes are anticipated at this time.

The evolution of the organizational infrastructure for information management is moving quickly and must be in place by 1 October. This may necessitate the formation of provisional organizations before that time to initiate the development of the commands' information management plans, which are due at HQDA this summer. Through this infrastructure, the Army will, for the first time, begin to manage one of its most important management resources—information—in a logical and more efficient manner.

MAJ. GEN. ROBERT J. DONAHUE is the deputy assistant chief of staff for information management, Headquarters, Department of the Army. A graduate of the Army War College, he holds a master's degree from Pennsylvania State University. He has served in command and staff positions in Vietnam, West Germany, Japan and the United States. Prior to his current assignment, he was director of the Joint Tactical Communications Office, Ft. Monmouth, N.J.

Control and Coordination

The Architecture: Goal Systems that 'Talk'



Enemy troops can be seen advancing to the tree line. The forward observer (FO) determines the azimuth and range and requests a fire mission. His battalion computes the firing coordinates and passes them to the guns.

In seconds, rounds are on the way to impact on the spot illuminated by his laser designator.

The FO determines and reports enemy casualties and immediately displaces to a new location before he is discovered by the enemy. Appropriate commanders and their staffs are notified of the target and the results.

What is important about this scenario is that not a word needs to be spoken. Information systems that exist today could support each of the players in getting the job done. The FO could use a hand-held device to enter the azimuth and range of the target. This information, coupled with his position on the ground as reported by a position locating and reporting system, could be transmitted via a combat net radio to a computer at battalion for computing firing coordinates to pass to the guns.

After impact of the rounds, the FO could use the same hand-held device to report the results of the engagement to commanders and their intelligence and operations officers in tactical operations centers (TOCs). Additionally, the computer system in the firing battery could report the number of rounds expended to the resupply point and receive information concerning maintenance that might be required as a result of this fire mission.

A problem exists, however. Since the majority of the information systems mentioned here have been developed independently, they do not automatically "talk" to each other. As a result, the user must either pass information verbally or by using paper, magnetic tape or punched cards, or he must buy equipment that translates the information so that the various information systems understand each other.

The Office of the Assistant Chief of Staff for Information Management was created, in part, to manage the development of information systems in the Army so that the tremendous capabilities available in current information technology could be used more effectively to support the Army, in both peace and war.

The OACSIM will manage the development of information systems, whether tactical, sustaining base or strategic, through an architectural approach. The information architecture is defined to be "a construct, framework or structure which classifies relationships between and among all elements of information." The information architecture is the overall perspective of the hardware, software and data in the information mission area.

From his position on the Army staff, the assistant chief of staff for information management can view all information systems, both existing and planned, regardless of proponency. He can then determine the redundancies and inefficiencies that might exist, with a view toward total integration of systems and sharing of information.

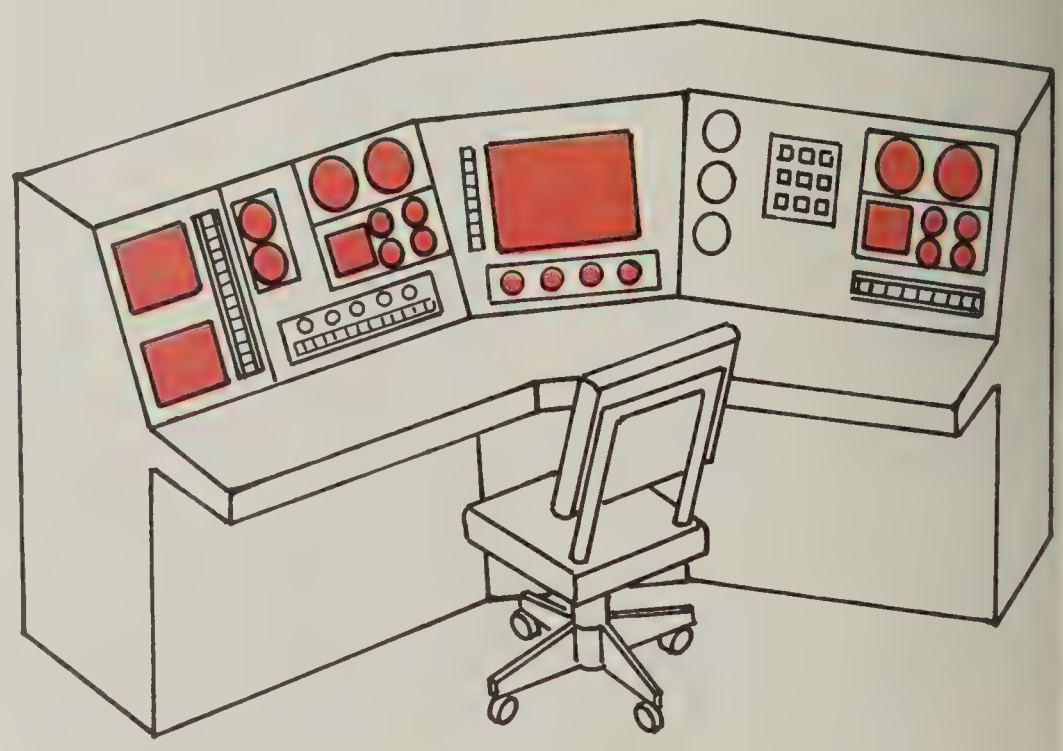
In an information architecture model, the baseline represents the information systems, both good and bad, that currently support the Army. It is determined by an inventory of operational information systems and an analysis of the relationships between them.

The objective describes the desired makeup of Army information systems, taking into account constraints imposed by the Department of Defense and Congress, but capitalizing on new and emerging information technology. It is determined by an analysis of information needs, from the perspective of commanders and supervisors throughout the Army.

The information management plan is the time-phased plan used in the transition from where information architecture is to where it should be going. It takes into account guidance from higher levels, resource constraints and ability to absorb new technology.

The current target describes the information systems in the "pipeline"—those systems currently under development. These systems must be analyzed constantly to determine if they are still in line with the latest version of the objective and, where they are not, if they can be redirected, if they should be terminated or if they should be allowed to develop despite acknowledged shortcomings. Constant analysis of the current target will preclude development of information systems that "do not fit."

Efforts are already ongoing in all four parts of the model. The greatest difficulty has been in producing a proper objective that rectifies problems of the past and foresees developments five to ten years in the future in a field that undergoes major changes every two to three years.



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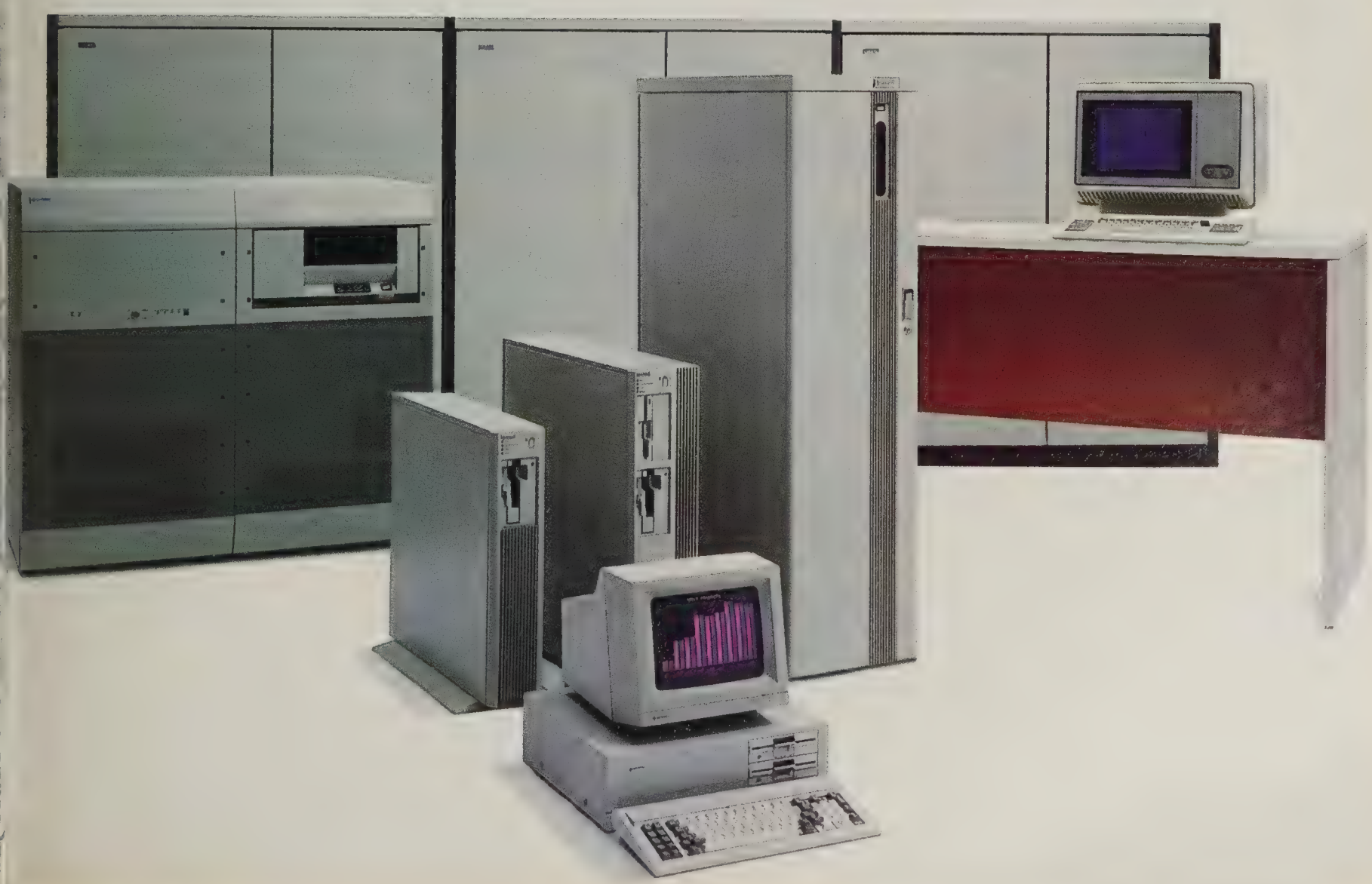
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ile this formal objective is being de-oped, the OACSIM is publishing a st-cut" objective based upon a triple-ed approach.

he first, or highest, tier is composed egional service centers using large in-mation systems to support the needs the general population of Army cus-ers. The second tier provides support organizations and installations to fill rmation requirements that are time sitive or peculiar to that organization easonable to operate at that level (for mple, a system that assigns housing newly arrived personnel). The third is composed of those devices such as sonal computers, telephones, radios, d processors and terminals with which human–machine interface occurs and quest for information service is made. nder the concept of the triple-tiered ctive, a user requests an information ice and the system determines the ap-priate level for response. If the user its to manipulate a spreadsheet and service is provided within the capa-ies of the work station (tier 3), or if wants to update casualty figures at division TOC (tier 2) or run a com-mathematical model on a supercom-r (tier 1), he should not have to know intricacies of the software, the pecu-ties of the hardware or the location he data. The user simply says "do and the system determines how and re it should be done and reports to the user when the task is complete.

With a defined information architecture, the development of information systems can be managed in a much more controlled and coordinated fashion. Information requirements are still defined by commanders and functional proponents—the ACSIM will never attempt to tell the experts what information they need to do their jobs. Conversely, commanders and proponents should state requirements, not solutions.

It is the job of the ACSIM and the commander of the Information Systems Command to determine the best technical solution to the stated requirement. In this way, the Army will preclude the current practice in which commanders or proponents state the requirement, develop the solution and field the information system, all within their relatively limited view of the information world. It is no wonder then that attempts at system integration often occur *after* systems are developed.

With information architecture, supplemented by guidance and carefully chosen standards, the Army will develop information systems built to satisfy the requirements of the proponent and to fit into an integrated Army information system structure before the systems are fielded.

If the Army is to have information systems that can be used in the garrison and on the battlefield, that capitalize on state-of-the-art technology, yet efficiently and effectively use the limited resources available, it must have one integrated game plan. To do this, the artificial boundaries that some perceive in the information world must be erased.

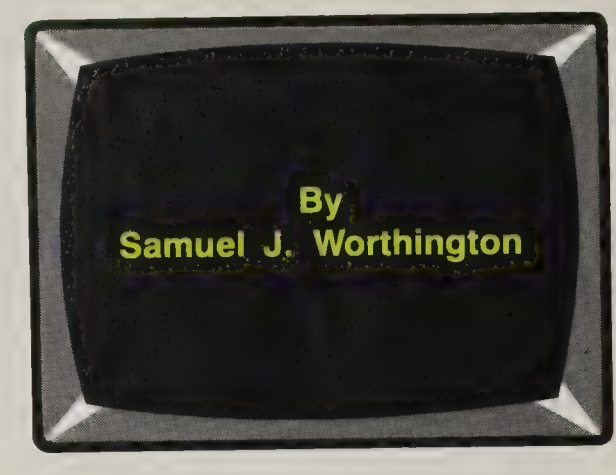
Returning to the opening example, the information concerning rounds of artillery expended, which appears to be tactical information at first glance, becomes command and control information when it updates "ammunition status" in the division TOC, changes to sustaining base information when it triggers a request for resupply from a continental U.S. ammunition depot, and may even become strategic information when it is rolled up as part of "ground force logistics status" for the Joint Chiefs of Staff.

It is clear that information, regardless of its source, has many uses and must be shared. It is the job of the ACSIM to manage information and information systems Army-wide to maximize their use and provide the greatest benefit possible to the entire Army.

LT. COL. GEORGE F. KOLESAR is assigned to the Architecture Design and Control Directorate, Office of the Assistant Chief of Staff for Information Management. He has commanded units in Vietnam and West Germany. A graduate of the U.S. Military Academy, he has a master's degree in computer science.

Must Be Efficient, Cost-Effective

IMA Resources: The Target is Flexibility



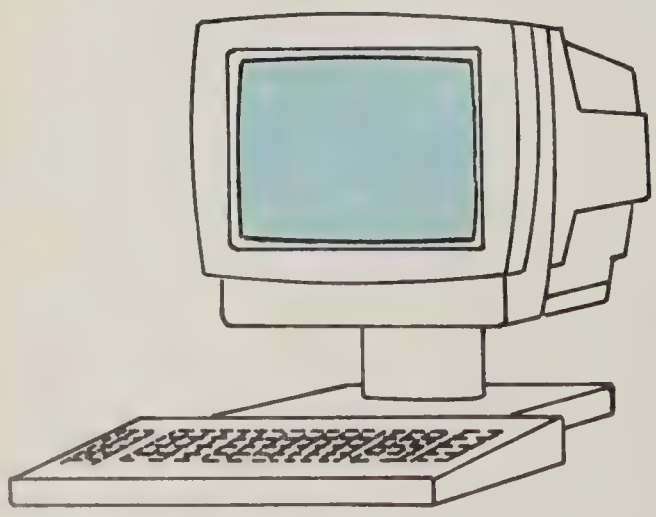
A primary goal of the assistant chief of staff for information management is establishing the concept, policies, procedures and managerial process necessary for the Army to develop the most efficient and cost-effective information systems. To achieve this, an information management process has been designed to provide for decentralized execution, expedition of the acquisition process and allowance for centralized management and guidance.

Part of the challenge has been to build a process that allows benefits to accrue at each level of Army management. These benefits include providing maximum local independence of action without sacrificing the benefits of sharing resources, eliminating duplication and providing interoperability.

The process is designed to allow the Army to build information systems in a timely manner. The management procedures contained within the forthcoming Army Regulation (AR) 25-1, the Army Information Management Program, and AR 25-5, Information Management for the Sustaining Base, will guide the Army in that direction.

AR 25-1 establishes the Army's information mission area program. Currently, the Army uses information systems in three areas: theater/tactical, strategic and sustaining base. AR 25-1 establishes the principles for the Army to manage information systems within, between and across these three arenas, eventually merging them.

Under the umbrella of AR 25-1, other Army regulations establish the policies for each of these areas. AR 11-39, Army Command and Control Systems Program, governs the theater/tactical arena; AR 525-1, Department of the Army Command and Control System, sets policy for the strategic arena; and AR 25-5 states policy for the sustaining base.



These regulations and a variety of others in unconnected programs will be merged or integrated in a single AR-25 series. The concept of the unified AR-25 series is new and will bring with it many positive changes in how the Army acquires, manages and uses IMA resources.

The key in obtaining many of the previously stated benefits is the planning required by the new program. This guidance is used to create an information management plan (IMP).

Every IMA management level must know what is expected by the management level above it and must communicate this information along with its own guidance to levels below.

Basically, the process is as follows: planning guidance will be published annually by the ACSIM with input from the Army staff functional proponents and higher level authorities such as the Army secretariat, Office of the Secretary of Defense and Congress.

Based on this guidance, organizations at all levels will identify their IMA requirements and initiatives and submit them in a consolidated plan. As a result, standardization, integration and interoperability will occur at each level.

Once a MACOM creates its information management plan, the plan will be transmitted to Headquarters, Department of the Army, where the ACSIM, assisted by the Army staff functional proponents, will review it. At each level, the managers will strive to integrate requirements and initiatives within and among the theater/tactical, strategic and sustaining base arenas.

The IMA requirements approved at the HQDA level will constitute the Army's information management master plan (IMMP). The IMMP will be distributed Army-wide and MACOMs will execute their portions, where resources are available or will use the IMMP as the basis to request resources in the planning, programming, budgeting and execution system.

Once resources are available, the originators of the requirements may acquire information systems or services in accordance with the new life cycle managment (LCM) and life cycle development (LCD) processes being developed. The new LCM and LCD processes will be operational in late November, phasing in as the current LCM and LCD are phased out.

By November, AR 25-1 and AR 25- will replace AR 18-1, AR 105-1 and AR 340-8. These are the automation, communications and records management regulations, respectively. In addition to new LCM and LCD processes, there will also be acquisition strategies and initiatives such as the greater use of Army operations and maintenance funds to buy information systems and strategies to speed up the acquisition process for information resources.

The new IMA management concept was initiated on 28 March with the distribution of the Information Management Planning guidance. This first guidance and planning is out of cycle since it occurs in April and not in the December-January time frame. All subsequent planning cycles will occur in the December-January time frame.

The ACSIM has many policy initiatives under way to create a better process for the Army to use in acquiring information resources and services which will form an architecture providing the Army with more efficient, cost-effective IMA systems.

The goal is to provide more flexibility for Army commanders in managing their IMA resources.

SAMUEL J. WORTHINGTON is acting chief of the Policies and Strategies Directorate, Office of the Assistant Chief of Staff for Information Management. He previously served as chief of the policy division, OACSIM, and in computer operations, supervision and management positions in Army Materiel Command and Headquarters, Department of the Army.



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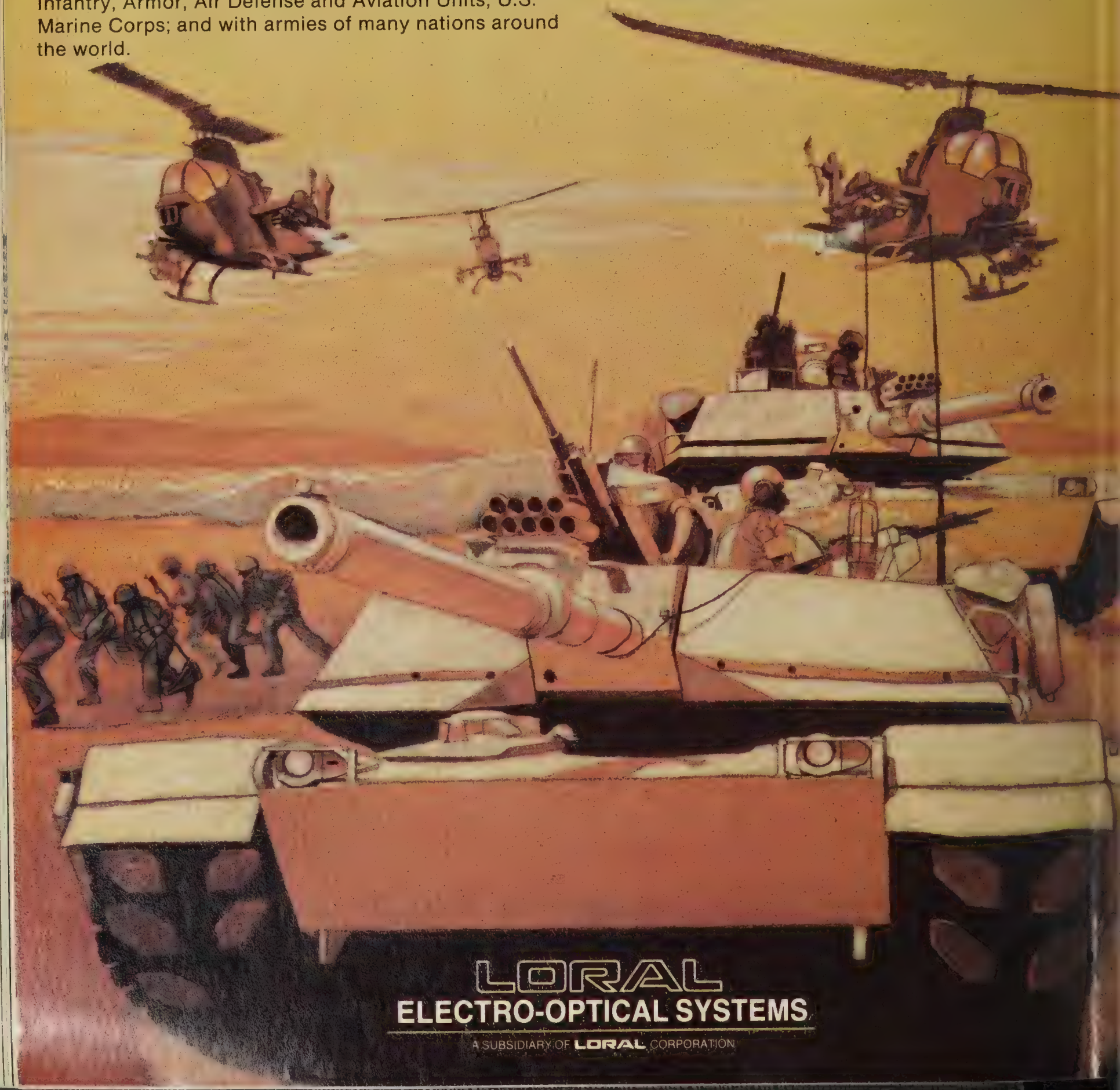
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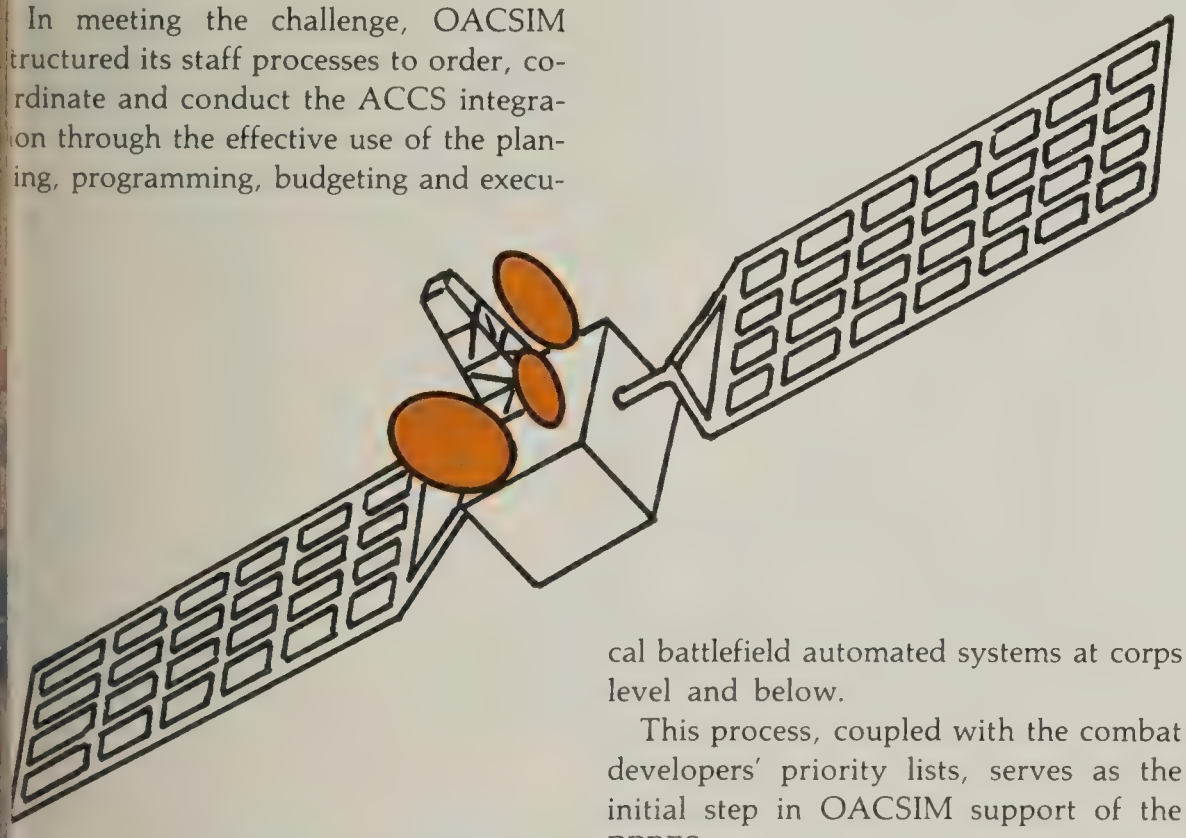
Integrating Tactical Command and Control

By
Lt. Col. John J. Keane
and
Maj. Omar Maden

The greatest challenge facing the Office of the Assistant Chief of Staff for Information Management in the tactical arena is the integration of the Army command and control system (ACCS). The overall ACCS encompasses the tactical command and control systems in five areas: maneuver control, fire support, air defense, intelligence/electronic warfare and combat service support.

As the Army staff integrator for the ACCS program, OACSIM must coordinate the development of the tactical command and control (C^2) systems to satisfy the intra-Army, joint and combined interoperability requirements postulated in the AirLand Battle doctrine. This effort is accomplished through close coordination with the Army's major commands, the Organization of the Joint Chiefs of Staff, allied organizations and Army staff agencies responsible for the development of the C^2 systems.

In meeting the challenge, OACSIM structured its staff processes to order, coordinate and conduct the ACCS integration through the effective use of the planning, programming, budgeting and execution system (PPBES). To this end, OACSIM influences candidate systems in the near term between two to five years, and five years and beyond through its long-term initiatives.



In the near term, the ACCS integration would work through the program objective memorandum cycle of the PPBES to accomplish five tasks:

- Listing order of priority of ACCS requirements.
- Performing functional management of the ACCS architecture.
- Developing an Army-level ACCS implementation plan.
- Developing the Army interoperability policy program.

The order of importance of the ACCS requirements is based upon the interoperability needs documented in the Army battlefield interface concept (ABIC). The ABIC identifies the intra-Army joint and combined interface requirements of tactical battlefield automated systems at corps level and below.

This process, coupled with the combat developers' priority lists, serves as the initial step in OACSIM support of the PPBES.

The coordination of the validated user requirements and their associated materiel development plans provide a solid foundation for the execution of the near-term program.

The next phase of the integration process calls for the functional management of the ACCS architecture. This phase enables OACSIM to concentrate its resources on the high-priority requirements and provide for the concurrent integration of the C^2 systems into the ACCS.

General programming and execution guidelines will be promulgated in the near-term ACCS implementation plan. It is envisioned that the implementation plan will delineate the Army's operational and materiel priorities along with a coordinated functional framework. This phase will help combat and materiel organizers meet their stated goals, plan for future improvements and maximize scarce resources.

Coupled with the near-term implementation plan, the Army interoperability policy program will establish policy consistent with the validated programs. The principal feature of this effort will be a unified approach to the integration of the ACCS into joint and combined automated interfaces. Additionally, the interoperability policy program will serve as the bridge for establishing long-term initiatives.

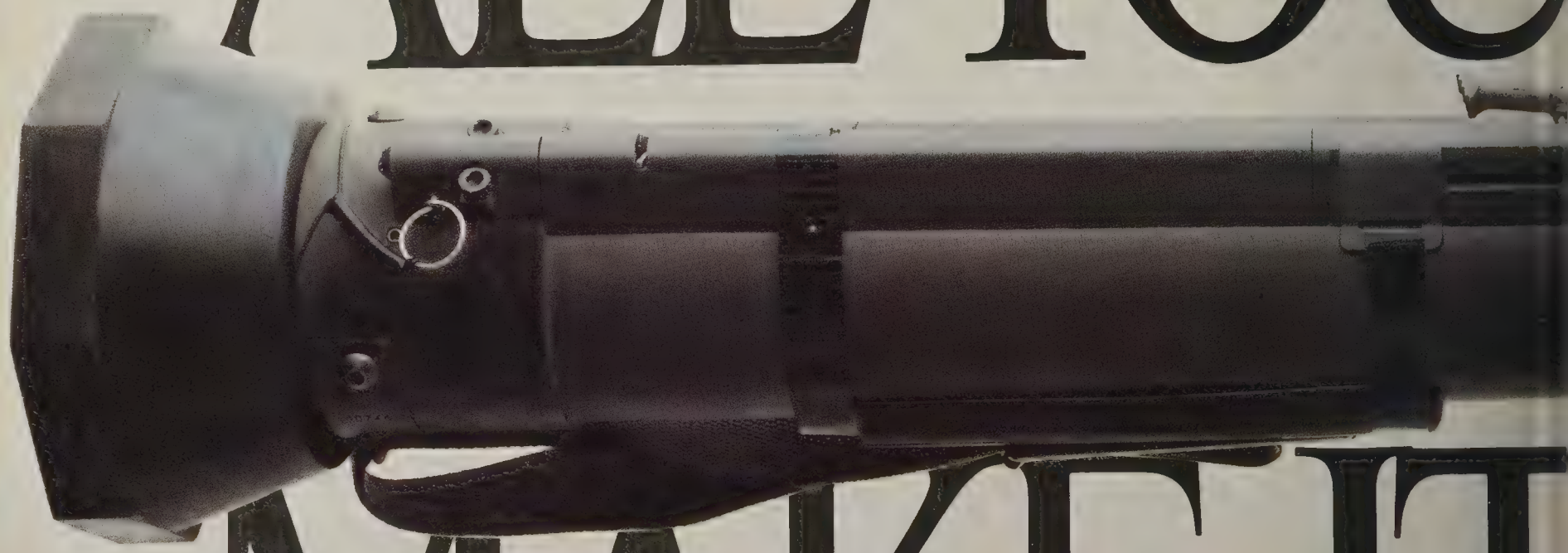
The long-term initiatives are aimed at the development of future joint and combined interfaces. As technology advances, the Army must be concerned with developing new force structures, equipment and doctrinal approaches.

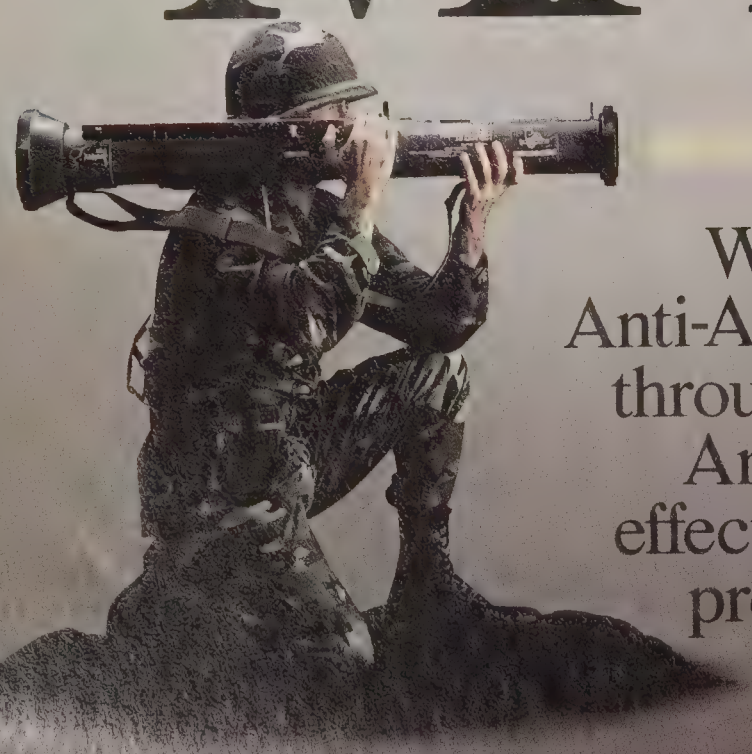
While the Army plans to incorporate new technologies, OACSIM must plan and program their implementation into the ACCS architecture. The aim of the long-range initiatives is to allow for a smooth transition to the user in order to minimize potential operational disruptions.

Currently, OACSIM is breaking new ground in the area of C^2 interoperability. Its success will be measured in terms of how well technology is integrated into the Army C^2 systems to improve the soldier's and the commander's ability to fight. The identification of needs to help them perform their mission and the ability of OACSIM to integrate the ACCS in a cost-effective manner are the most important parts of the mission.

LT. COL. JOHN J. KEANE serves in the Policies and Strategies Directorate, Office of the Assistant Chief of Staff for Information Management. A graduate of the U.S. Military Academy and the Command and General Staff College, he has also worked in the Defense Nuclear Agency. MAJ. OMAR MADEN also serves in OACSIM's Policies and Strategies Directorate.

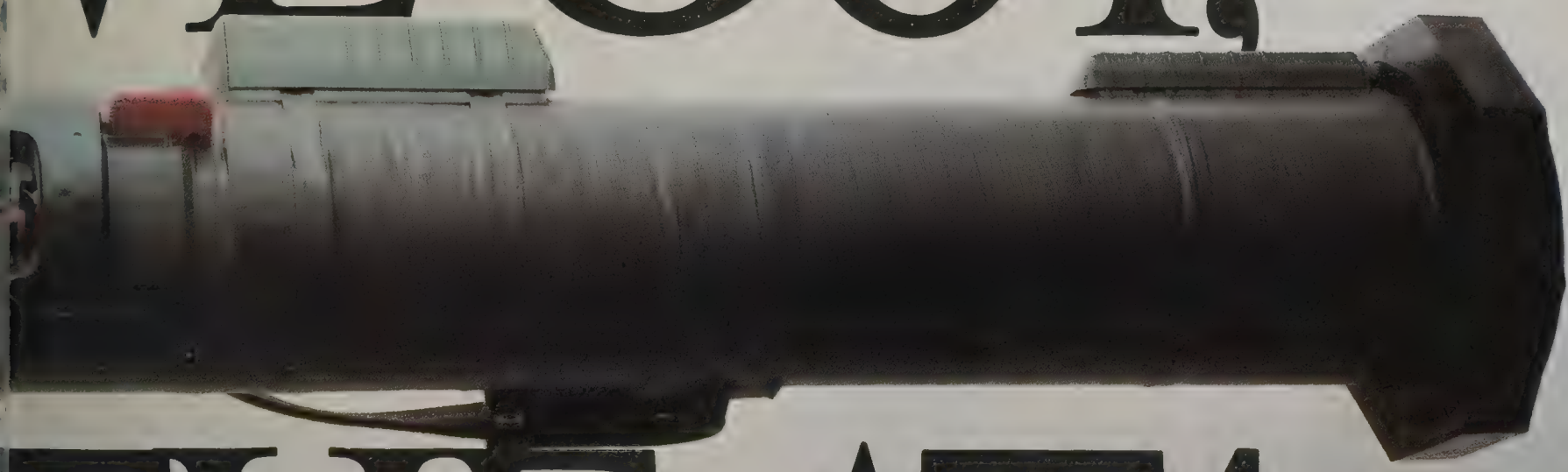
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Viewing Information as a Resource

IMA's Impact on Personnel and Training

By
Lt. Col. Raymond E. Henry

The establishment of the information mission area has a potential impact on almost 100,000 military and civilian personnel in the U.S. Army work force.

The establishment of the IMA reflects the integration of five subdisciplines: automation (including office automation), communications, records management, publishing and audiovisual.

The objective of the integration under the "single manager concept" and leadership of the assistant chief of staff for information management is to view information as a resource, with an associated cost. The need to manage information and, therefore, the need for information managers, reflects the convergence of these subdisciplines in an increasingly technological world.

The effect of this integration will be reflected in both near- and long-term training requirements. The Office of the Assistant Chief of Staff for Information Management has responsibility for the evaluation of training and doctrinal requirements for the IMA. This office has identified those people most directly associated with information management.

The military can be found in two commisioned officer branch specialties (Signal Corps 25 A–F and Adjutant General's Corps 42 A–B); one functional area (Systems Automation 53 A–C); one skill (5B Audiovisual); and six warrant officer and five enlisted military occupational specialty (MOS) career management fields in telecommunications, automation and administration areas.

The civilians in the IMA are found in public affairs and communications media, automation, communications and records management career programs, and in several areas not currently covered by career programs. Approximately 15,000 civilian and 85,000 military personnel directly support the Army's information management functions.

The ACSIM recognizes that, while the list of skills is not all-inclusive, it does provide a perspective on the magnitude of the impact the establishment of the IMA has had on the Army, both from an organizational viewpoint and a personnel and training viewpoint.

The convergence of technologies has mandated cross training, as well as a single manager for these information management subdisciplines. The development of personnel interrelationships among the currently segregated subdisciplines of the IMA will be critical. Managers at all levels must be aware of their responsibilities as mentors and trainers. They will need to ensure that individual development plans reflect the need for broader awareness of the role that each subdiscipline element plays in respect to the larger goal of information management.

Managers can help by encouraging contacts between the people who represent the specialized technical knowledge required for each subdiscipline in the performance of their duties. For example, a publishing expert can assist the automator in picking the best output device for system design.

As the Army's information manager, a major objective of the ACSIM will be to provide information managers at every level the opportunity to meet both personal as well as Army objectives. The information manager, who must be a competent executive, will have to serve as an adviser to management and as the liaison between the complex technological world and the end user.

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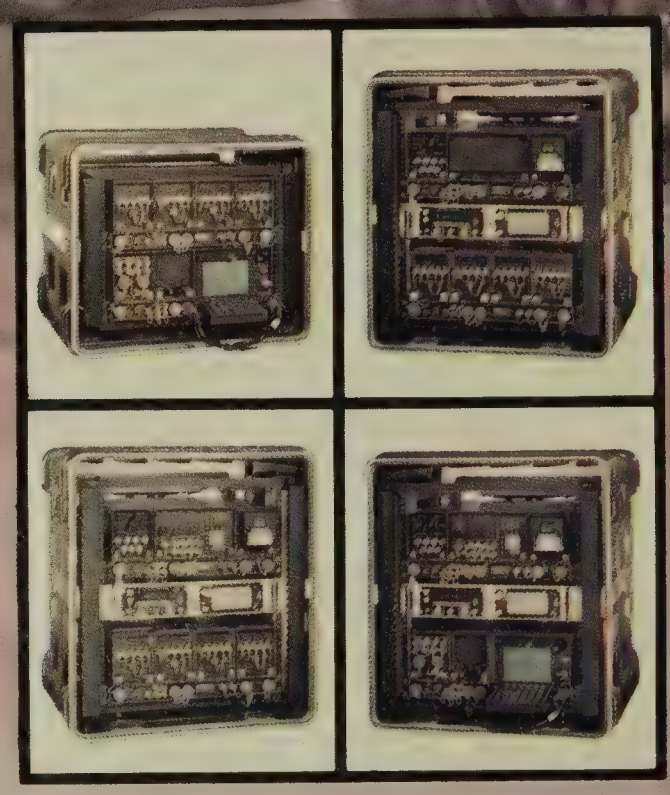
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ion assets. To meet the OACSIM objective, a three-phased approach—analysis, transition and implementation—has been proposed to develop information managers.

During the analysis phase, the IMA subdisciplines and personnel involved in each will be reviewed. This will be accomplished with assigned proponents to determine the current training resources available. The results of the analysis phase should determine area(s) of need, and provide a basis and direction for both near- and long-term solutions to the training of information managers.

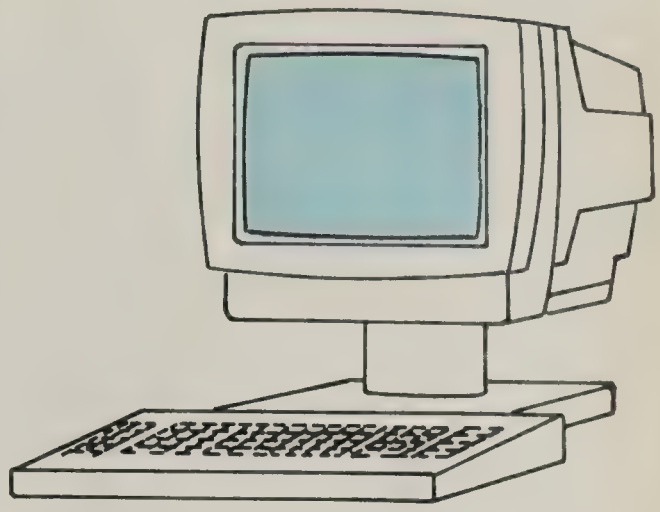
During the transition phase, the primary focus of the OACSIM effort will be directed toward providing a near-term solution to training needs. To satisfy these immediate needs, preassignment training, contract training, off-the-shelf courses or on-the-job training would be used to provide the information manager with the ability to fulfill personnel training responsibilities, and provide cross-fertilization between the subdisciplines of the IMA.

Rotating job assignments among mid-level managment personnel would assist in fulfilling the need for at least general knowledge of each of the subdisciplines. Managers could provide such rotating job assignments for selected personnel based on an evaluation of individual needs during personnel counseling discussions. This should be done in coordination with their respective training officers.

The objective of this phase will be to produce information managers with a broad knowledge base of all the subdisciplines. Concurrently, long-range training and career development programs will be implemented.

During the implementation phase, efforts will be directed at long-term changes to the career development programs and to developing specific in-house (Army) courses. The objective will be to provide the Army with professional information managers and to provide information training for all levels of personnel, to include the end user. The requirement to delineate a comprehensive career development program for both military and civilian personnel is part of this phase.

As part of the organizational realignment discussed earlier, deputy chief of staff for information management and director of information management positions have been established throughout the Army infrastructure. Their establishment reflects a need for true information managers, people with wide-ranging skills. These managers will bring about an information revolution within the Army and revolutionize the way the Army does business.



Their roles as senior trainers will be of critical importance. The development of interrelationships and formal training for all members of the Army's work force is a monumental task facing senior management officials. However, the benefits to be derived for the Army as well as the U.S. taxpayer far outweigh the amount of work facing these forerunners of the Army's information revolution.

LT. COL. RAYMOND E. HENRY is an infantry officer who has commanded units in the continental United States, Vietnam and West Germany, and is currently the division chief of the Doctrine and Training Division of the Policies and Strategies Directorate, OACSIM. He has a master's degree in educational administration.

"Boom"

During my second summer at the U.S. Military Academy at West Point, my class was moved to a summer encampment in the mountains outside the main garrison. We spent much of our time in the woods learning tactics and other soldier skills. We would return to the camp in the evening, wash and prepare for supper.

Formed into our respective companies, reports were given and the companies put at parade rest to await the lowering of the flag. The flag was not visible from many points in the camp, and a guard detachment located in the guard house operated a loudspeaker meant to warn everyone of the impending ceremony. A small gun, called the "retreat cannon," fired a traditional round to signal all personnel to stand at attention and salute as the colors were lowered.

The gun appeared to have been a veteran of some past war and was not in good shape. It would misfire habitually and cause the guard detachment to go into a frenzy while attempting to reload and shoot it within a prescribed time. The guard house played a tape of the appropriate bugle calls (this being the modern Army) and the whole affair did not take more than three minutes.

On one particular evening we formed as usual to march to supper. The first bugle call, "Retreat," was sounded to be followed by the expected firing of the retreat cannon.

This particular evening the gun failed to function again and there was a long pause. The detachment firing the gun was frantically attempting to make the gun work but could not for some undetermined reason. The pause grew longer until everyone had decided that the old gun was just not going to fire at all.

Since this had never happened before during our stay, the leaders were at a loss as to what to do; after all, we could not walk off without saluting the colors, but we could not salute until the gun fired and "To the Colors" was played.

Fortunately, we were saved from this predicament by a quick-thinking guard. Picking up the microphone in the guard shack, he calmly announced to all within hearing distance, "Boom." To our chagrin the ceremony picked up where it had left off and the flag was lowered to the strains of "To the Colors."

I heard later that the guard was rewarded for his quick thinking and initiative by being punished with demerits. There were about 900 hungry cadets who thought he did the right thing though and appreciated that innocuous sounding "boom" on the loudspeaker.

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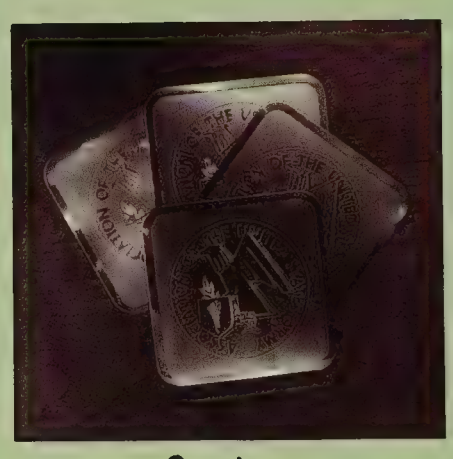
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By Lt. Gen. William J. McCaffrey
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Making It: An Impious Guide to the Firmament

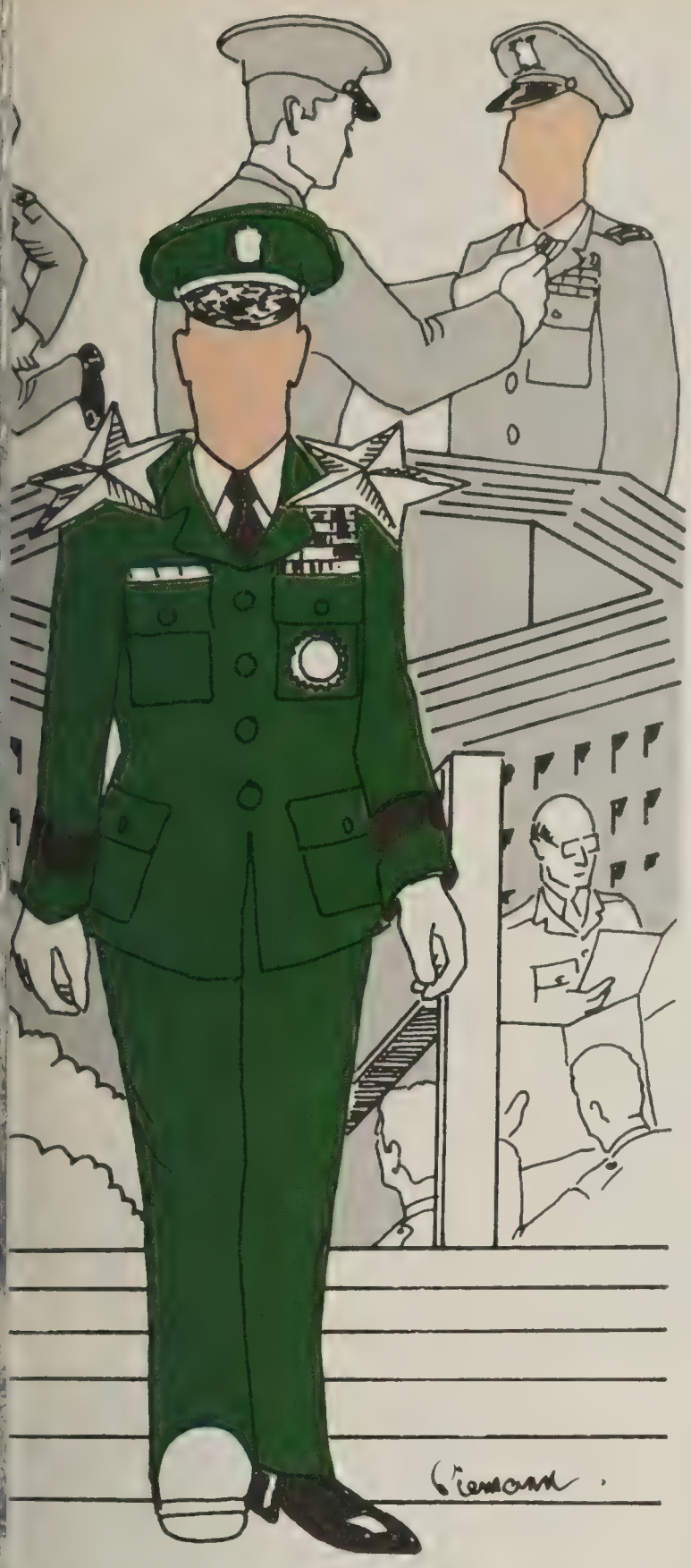


Of the time-honored procedures through which the Army conducts its business, perhaps none is so clouded in mystery as the way it chooses its general officers. In this article, part whimsy and part fact, a former Army inspector general who has served on many colonel and general selection boards, either as chairman or member, offers a light-hearted analysis of the factors that go into the consideration of who shall join the exalted circle of praefectus generalis *(or, in more precise Latin,* dux).

* * *

Traditionally, far too much mystery has surrounded the development, training and selection of general officers. The mystery has persevered over the years because there has been no scientific methodology available for coping with the variations evident to the casual observer, not to mention the conscientious student, in the behavior patterns of these most interesting mammals. Now, however, new tools made available by advances in the study of ecology make it possible to simplify the entire field and, in fact, to construct a unified theory that meets the challenge of scholarly research.

Considering that the *praefectus generalis* was on the endangered species list of several patriotic organizations and that prizes were awarded to general watchers who could prove they had observed a *praefectus generalis* in full plumage but a few short years ago, it is remarkable that the species seems now to be recovering. It is in less danger of disappearing than the snail darter of recent fame. It is a plea



The core list of desirable characteristics in general officers may be immutable, but fads, fashions and luck can influence the margins—an insider's handbook to current pitfalls on the stairway to the stars.

re to be able to release this reassuring
ws.

Although it hardly seems necessary, in
e interest of establishing the scientific
ses of my hypotheses, I shall briefly de-
ibe the function of the *praefectus gen-*
ilis in the ecosystem in which he plays
h a distinctive and critical role.

As in the various chemical processes
ere catalysts initiate or enhance re-
ions of various materials, so do gener-
officers initiate or enhance the reac-
ns among individuals, organizations
d events. The role of a catalyst can be
nign or malignant, depending on what
tcome is desired.

Only recently have scientists fully un-
rstood the functioning of catalysts. In
past, it was popular to ascribe to the
alyst complete responsibility for the reactions that ensued.

A reevaluation of the role of other catalysts in human reactions tends to place the contributions of the catalysts in a more modest, realistic light. Temperature, texture, velocity, proportions, latent energy, chemical affinity—to say nothing of the Van Allen belt and serendipity—all play a role and must be factored in.

In layman's language, this means that in some situations the presence of a *praefectus generalis* does not make any difference. In the military, however, as in chemistry and sociology, the search for efficient catalysts and effective general officers continues apace. The military is in search of people who can lead any group of individuals and any number of organizations, thus solving any problem.

Just as there are differing types of catalysts in chemistry, so there are different kinds of generals. Chemical elements are arranged in periodic tables, and, similarly, general officers are arranged by grade and specialty. Theoretically, generals are interchangeable, but, of course, observation makes it evident that this is one of the maddeningly unpredictable characteristics of the species.

In some roles they perform brilliantly. Then, given different duties, they fail miserably. Some of them look like barn burners as brigadiers, then run out of magic completely when they don their second stars. This is just one aspect of the study of general officers that has defied rational definition in the past.

The first law of general officer cultivation is that, although they may appear to be clones, no two generals are alike. Misapprehension of this simple law has, over the centuries, caused great confusion among general officer watchers who were misled because the generals looked alike, dressed alike and exhibited similarities in mannerisms. Ecology provides great insight into why they appear so. It is a defensive maneuver provided by nature to ensure the continuation of the species.

If generals exhibited individual characteristics considered dangerous to their species, the older, stronger members of the group might well destroy them. Consequently, the pattern of the dominating old bulls at the top of the herd becomes the pattern for the appearance and conduct of the newer members.

Anthropologically speaking, *praefectus generalis* is a hybrid. Like the mule, the species cannot reproduce itself. There are, of course, exceptions (the MacArthurs, the Pattons, the Walkers), but in all ecosystems there are exceptions.

Despite the growing use of sperm banks and artificial insemination, it is the official policy of the Army not to breed general officers.

The system depends both on genetic accidents and on total system dedication. (Genetic accident is a synonym for luck,

and system dedication equals hard work.)

Here is how the process works. The theory goes back to the political philosophers of the late 1700s who designed the U.S. Constitution. They had fought to free the country from a hereditary monarchy and had defeated an army led by officers who represented the hereditary elite. They did not want to trade one form of tyranny for a similar homegrown brand. They decided the people would be responsible for defending the country and general officers would come out of the peoples' army. All able-bodied men would be obligated to serve in time of crisis. It would be an army of citizen-soldiers.

The concept of the citizen-soldier pledged the survival of our freedoms to the willingness of each succeeding generation to defend those freedoms. It mandated that the general citizenry produce the leaders and fighters capable of meeting whatever challenges arose. Our founding fathers formulated these principles to ensure that the leadership of our armies would represent the people's aspirations, not the interests of any privileged class.

Originally, officers were elected by soldiers and commissioned by state governors, who also appointed generals from among the officers in the state militia. Officers are no longer elected, but state governors still commission them in their state militias. To this day, general officers of the standing forces are appointed with the advice and consent of the Senate.

The process of selection of general officers has grown more complicated since the Continental Congress entrusted Gen. George Washington with the command of troops assembling in the vicinity of Boston. The design of the development process of *praefectus generalis* today owes many of its virtues and few of its vices to the lessons learned in the struggle for independence.

The Army's first crop of generals provided some bitter lessons. Among them, there were traitors, cowards, crooks and incompetents. Fortunately, there were also loyalists, heroes, men of honor and men of genius. Since those trying days, the search has been devoted to developing procedures to screen out the first and to identify the latter.

For example, Benedict Arnold was ambitious, brave, energetic, resourceful and effective with troops, but he was a poor administrator. He had a young wife with Tory sentiments and expensive tastes. He developed contempt for the members of the Continental Congress, who he considered (with some logic) to be cowardly and corrupt.

A lesson was learned as a result of his defection to the enemy: the Army ceased to promote overly ambitious officers with young Tory wives who had expensive tastes. Congress has since behaved with such dignity and dedication that no general officer has ever had occasion to treat them with contempt.

The system works much like a gyroscope; if it starts to tip, invisible forces working from within tend to right it. It may wobble a bit now and then when especially strong forces upset it, but it is a system designed to strive for balance and remain upright regardless of what goes on around it.

One hears an occasional complaint about the intelligence of some general officers. A French army legend addresses this issue.

A Col. Dupont was leading his regiment in the storming of the walls of Ratisbon. Napoleon Bonaparte stood on a little mound about a mile away, observing the action. As he saw Col. Dupont disappear over the parapet, followed by his brave soldiers, he ordered his *aide-de-camp* to gallop into the town and inform the colonel that he had been promoted to brigadier general.

The aide rode hard, arrived in town just as the mopping up was completed and found himself in the middle of the medical station where doctors were treating the wounded. Inasmuch as the emperor had already promoted the colonel, he quite properly asked the surgeon if he had seen Brig. Gen. Dupont.

The surgeon replied testily that he had not seen Brig. Gen. Dupont, but that he had Col. Dupont on the litter; that Col. Dupont had been shot in the head, that he was trying to stuff the brains back into the colonel's skull, and that the dust and dirt raised by the aide's mount were not helping.

At this point, the body on the litter sat up, slapped the top of his skull back on and said: "It is all right, surgeon, I won't need my brains any longer—I am a general officer now."

Stories of this kind are perpetuated by smart staff officers who, just because they do not move their lips when they read, judge themselves to be intellectually superior as a subspecies to all *praefectus generalis*. This idea was rampant in the German general staff after World War I. They ended up with a corporal in charge. I do not have to relate what happened then.

Suffice it to say that intelligence is but one of the many qualifications that are considered in, but do not necessarily determine, the selection of a typical general officer. Early theories simply examined one or two of the leading specimens of *praefectus generalis*, listed their attributes, both positive and negative, and concluded that candidates who had more of the former and less of the latter would eventually find themselves proud members of the group.

Research eventually illustrated that this procedure failed to accommodate both the seasonal and generational shifts. The early theories were accurate for short time spans.

For example, after the Civil War everybody dressed like Gen. Ulysses S. Grant and nobody looked like Maj. Gen. George B. McClellan. Today, Gen. Grant's tomb is large, and only eight McClellan saddles in the Old Guard's ceremonial detachments remind one of a mutation that might have been the mainstream for a generation if it had prospered.

The new theory is based on the subtle incremental changes that follow the publication of each new list of selectees. My research indicates a ready explanation for these movements. In part, the problem creates the solution.

For example, the horse cavalry was replaced by the armored corps. This was a technological change which was logically resisted by all cavalry members who owned expensive boots and enjoyed riding. However, the ease of supplying gasoline and the difficulty in furnishing fodder for animals pushed the logistician over to supporting the side favoring the vehicles.

General officer selection boards, whe

LT. GEN. WILLIAM J. McCAFFREY, U.S. Army, retired, completed his active military service as Army inspector general in 1973. A 1939 graduate of the U.S. Military Academy, he was deputy commander of U.S. Army, Vietnam, during the Vietnam war and served in Italy in World War II, ending the conflict as chief of staff, 92nd Infantry Division. In the Korean War, he was deputy chief of staff, X Corps, during the Inchon landings, the fighting around the Chosin reservoir and the withdrawal from Hungnam. He subsequently commanded the 31st Infantry Regiment and after retirement was AUSA's director of Regional Activities.

viewing the records and full-length photographs of candidates, increasingly voted gatively against those pictured with riding crop in their hands and boots out their calves. They chose, instead, ose wearing coveralls. Boots and riding ops eventually disappeared entirely, d tire gauges and coveralls were in.

Another parallel can be drawn from e study of ecology by analyzing the life cle of the bull moose. They live in a erarchical society. The biggest, strong- bull is in charge and leads the group its migrations, determines where it ll graze and for how long, and so on. uring the annual rutting season, the ad bull picks out his harem and segretes it; lesser leaders pick over what is t and so on down the pecking order. his inevitably results in some young ills being left without mates.

The smart young bull studies the techques of the leading bull. He then picks it the weakest old bull he can find and ocks him off. He thus works his way the chain, one bull at a time, until he head bull or until he meets a better ill.



So it is with general officers. The leading general of the day sets the tone; some of his subordinates will try to surpass the standards the chief has set and others may be incapable of reaching them, but the top man sets the values by which all will eventually rise or fall.

Every mutation of the *praefectus generalis* worldwide reflects some dominating progenitor who influences generation after generation. In Germany, it is Frederick the Great; in the United Kingdom, it is the Duke of Wellington (although it should be the Duke of Marlborough); in France, it is Napoleon; in Russia, it is Peter the Great or Kutuzov. In the United States, George Washington is the role model for successful candidates.

Following George Washington as a role model means emphasizing dedication to the mission, courage on the battlefield, concern for the men entrusted to one's command and subordination to civil authority. As admirable as these virtues may be, they are, at times, mutually incompatible. George Washington's skill was in balancing their inconsistencies. A study of the men who have led U.S. armies since will illustrate how difficult it is to balance these competing demands.

Gen. McClellan had great concern for the training of his men and their proper introduction into battle. He had little respect for the civil authority in the person of Abraham Lincoln, the President and Commander in Chief. For this deficiency he lost command of the Army of the Potomac.

He was succeeded by Gen. Grant, who had less concern for the survival of his men, but had great devotion to the cause of the Union and full respect for the President and Commander in Chief. Gen. Grant's style represented the continuing emphasis on selecting officers for promotion to general officer who will carry out the strategy and policies prescribed by the civil authority in the person of the President and Commander in Chief.

Of all who have graced the rank of general since George Washington, Robert E. Lee, more than any other, exhibited the standards and talents considered ideal. His example still influences the officer corps, but he represents the romantic, rather than the practical, code by which modern general officers must be judged. His presence in history ennobled the entire genus while establishing for all time the criticality of the choice of which civil authority one selects to obey.

The Grant role model was reflected by the majority of the general officers until after the Spanish American War, when a variety of technological changes in warfare and sociological changes in the United States created a need for a new strain in the breed.

More U.S. soldiers were lost during the Spanish American War to disease than hostile action. It should be no surprise that the change from a system of commanding generals to a general staff headed by a chief of staff would shortly be reflected in a series of general officers who displayed heightened talents in logistics, administration, medicine and science.

Lt. Gen. Samuel B. M. Young rose to the position of the first chief of staff, U.S. Army, on a record of having been president of the Army War College. Maj. Gen. James F. Bell was an engineer and a cavalry man, and held a degree in law. Maj. Gen. Leonard Wood, who served as chief of staff from 1910 to 1914, graduated from Harvard University with a degree in medicine.

It is no longer sufficient to be loyal to the constituted authority of the government, to be brave in combat, to be honest in financial affairs and to be intelligent; new members of the species must also be competent in one or more branches of the arts and sciences.

The new models must think faster and know more about more subjects than their predecessors would have imagined in their wildest dreams. This places demands on the developmental cycles and the selection of successful candidates.

Both the preparatory training and the selection process for general officers are lengthy and arduous. Furthermore, they are ongoing processes from the officer's entry into the military until retirement. Selection for general officer has occurred from the grade of first lieutenant (Maj. Gen. George A. Custer) to colonels, who, in contemplation of early retirement, had already stacked arms (names withheld to protect the guilty).

The relationship between training and selection is direct or, as the statisticians are apt to define it, "positive." Denied the opportunity to control the mating habits of the citizenry of this beloved country and, thus, to breed a superior strain, the Army has had to fall back on the environmental preparation of the genetic stock available.

The basic theory is that successful general officers must be capable of superior performance of the primary duties of their subordinates. This creates public



spectacles such as those of middle-aged men flinging themselves from airplanes, sweating at the controls of helicopters, staring vacantly into computer displays and wading through swamps up to their waists in muck or through staff studies and computer printouts, up to their necks in paper.

Rounding the figures off to make computation simple, let us say there are 400 general officers for an army of 800,000. The Army now insists on one fully assembled general officer per approximately 2,000 officers and men in the service. Mathematicians among the readers will discern immediately that there is one half a general officer for every 1,000 officers and men in the Army. Inasmuch as this system broke down years ago when the assembly line went haywire at the U.S. Military Academy, too often the Army ended up with a shortage of top halves of general officers and a surplus of the undercarriages.

As mentioned earlier, the processes of preparation and selection are both long and arduous. Selection is based on preparation, and preparation in the modern Army is based on some or all of the following: graduation from a four-year college (a master's degree is a plus); successful completion of the basic officers' course in the branch in which commissioned; a creditable performance at the Command and General Staff College; selection and successful performance at one of the war colleges; a tour of command at every level in the branch in which commissioned, up to the grade of colonel; a tour on the general staff in Washington, D.C., and preferably an additional joint assignment with the sister services; and service with the reserve components (desirable but optional).

The following are to be avoided: frequent branch transfers, overspecialization, identification with an obsolescent system (for example, pigeon loft platoons), multiple efficiency reports from the same rater (some exceptions if he gets to be chief of staff, but not always), courts-martial, bad debts, Tory wives with expensive tastes (see Benedict Arnold, earlier), being featured in Jack Anderson's column for letters written to a fellow officer's wife, drunkenness, physical illnesses such as heart trouble, lack of heterosexuality or too much thereof, and bad luck.

Having gone through this long and arduous period of testing and preparation, an officer becomes a full colonel. The selection board is about to meet, and he wants to estimate his chances of selection. Assuming there are 6,000 colonels in the Army, the odds could be as good as one to 15.

That can be refined a bit by estimating that generals serve about eight years before they retire, thus generating 50 vacancies a year. If the Army has a similar requirement for years in grade for colonels to establish eligibility for selection, the selection board might have the problem of picking 50 generals from among 4,500 eligible colonels; back to long odds again. The reason is that, although there will be a primary zone for selection, some colonels below and above the zones will be chosen.

Is there a way an officer can estimate his chances for promotion? There is, indeed.

If, during the years he served as a captain, the regimental commander, in endorsing the captain's efficiency report stated he would be happy to serve under the captain's command in time of war, the captain has become competitive.

If, as a young officer, a soldier com



MS-A



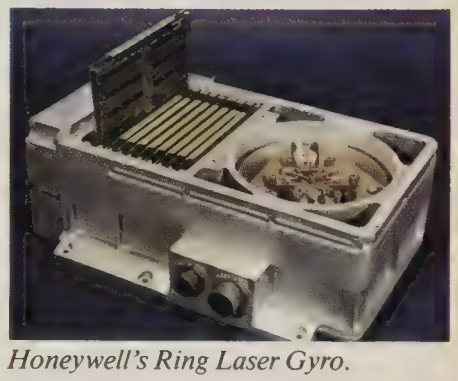
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nds a battalion in combat under a jor general who thinks that soldier is mewhat better than Maj. Gen. Thomas ("Stonewall") Jackson, and he later es to be chief of staff, that soldier's ospects are excellent.

If a young officer's wife happens to be e daughter of the senator who chairs e Armed Services Committee, the offi- will find this handicap easy enough overcome.

f a young officer is blessed with un- usual intelligence, unusual physical ability, great stamina, drive, ambi- n and a winning personality; reached nhood with high personal standards t as a major war was starting; and was osed to great danger and opportuni- the challenges of which were met with ctacular results noted by a grateful na- n—that officer ought to be picked up ow the zone. Some may have missed e or more of the above indicators. For se in this situation, there are other es.

In reviewing his own efficiency reports, officer should note if they include a tement to the effect that he is qualified be promoted to the grade of general. so, does it say now, or later? Do the orts reflect consistently some reserva- ns about character or capabilities?

It is possible to be a terrific colonel d not be qualified for promotion to neral officer. It is possible to have var- s talents, but lack the robustness of alth or the temperament to handle the allenges of the grade. It is also possible be unlucky, and to have served the tion so efficiently and selflessly that it s never noted. Those are the men who ke the Army such a wonderful place which to serve.

The final step in the process is the se- tion and approval, to include the ad- e and consent of the Senate. The sec- ary of the Army appoints a selection ard. The board is composed of general icers selected to reflect the major geo- phical areas in which U.S. troops are tioned and to represent the various nches of the services. The idea is to ng together a representative group whose ices will reflect the needs of the Ar- , and who will generally be familiar h the types of challenges that the se- tees will be expected to overcome.

The secretary of the Army, in his di- tive, normally specifies the number to selected, the zone from which the se- tions will be made, the number that y be chosen above and below the zone, and the special requirements for specialists.

Fads come and go, and woe to the colonel who gets caught between a youth and maturity switch. He can be too young one year and too old the next. Woe to the comptroller who has labored long and comes up for promotion when comptroller brigadiers are getting alternative specialties as infantry replacements. In other words, the secretary defines the number of round and square holes in which the board attempts to stuff pegs.

The board sometimes meets in secrecy and sometimes with inappropriate fanfare to start reviewing the records of eligible officers. The computer age will probably permit advances in the mechanical aspects of the process, but essentially each officer on the board must read each file and signify by some means his evaluation of the qualifications of each candidate.

Boards have had considerable latitude in how they organize the process. The adjutant general provides administrative support for the board, and normally a field grade officer functions as an executive in administering the circulation of documents and in recording the board's decisions.

Those with scientific backgrounds will be familiar with the "bell curve," which denotes the random distribution of flies on a camel's back. Well, the bell curve does not reflect the distribution of potential general officers among eligible colonels. The way it works with colonels is that the hump would be way up the camel's neck, and he would have an infinitesimal tail.

A quick review of the records will immediately reveal the colonel who is better than Stonewall Jackson and now happens to be serving as executive to the chief of staff. His folder is put into the "in" file with a sigh of satisfaction that can be heard all the way to the Kremlin. Next, there are a few types on whom the Lord has shamelessly dumped so many talents that all the rest of the candidates seem subnormal. Their files are pulled, and then comes the hard work.

The Board is then faced with the selection of perhaps 40 men from among perhaps several thousand fine and mediocre





men, and a few bums. The bums are easily identified and their files discarded. On occasion, their deficiencies may be called to the attention of the proper official for corrective action.

With one exception, there are always more fully qualified, splendid prospects than there are vacancies. Admittedly, on one occasion since World War II there was a period when a youth program was followed by a normal program which was followed by a mature program, as a result of which general officers were picked from one year group who clearly contradicted this generality. However, the norm is that the board must select few from among many.

Normally, this is done by secret balloting. Suppose there are ten board members, and the officers are rated from one to ten with a colonel of high caliber scoring a ten; he would end up with 100 points from each member. The votes would rarely be this unanimous, and a spread would appear as each officer reflects his own set of values in his judgment of the candidate's potential.

If the secretary has directed that not less than three selectees will be qualified astronauts, the board will attempt to pick the three colonels best qualified in that field. The secretary might, in his wisdom, restrict the number of officers who are over some calendar age or who have less than or more than a certain number of years' service.

Many colonels of great potential fall victim to chance. The officers familiar with their talents were poor authors of efficiency reports, or they drew, in the lottery of assignments, one or more incompetents or misanthropes. Instead of displaying a burst of creativity triggered by a tour under an inspiring leader, they were subjected to a fight for survival. Which brings me to the last law of promotion: "A man has to judge the success of his life on something more significant than the insignia he wears on his shoulder."

Is the system rigged? Is it "who you know, not what you know"? The system is run by men equipped with a variety of preferences and prejudices, with views conditioned by their own careers and backgrounds. It is fair to say that it is not so much who you know, as who knows you and what they know about you.

Word does get around in a closely knit society like the Army. Officers do much the same things as they travel up through the grades.

The ever-changing challenges they must meet act as an obstacle course that weeds out the poor jumpers. The obstacle course itself is, of course, changing constantly. The Army no longer has a requirement for superb horsemen and, today, swordsmanship is not even a varsity sport at West Point.

So far, I have avoided introducing the element which is critical in every aspect of a military career—luck. Luck plays a role on so many occasions which open up opportunities for the individual to demonstrate his capabilities or grow in stature in the eyes of his colleagues, subordinates and superiors that it would be remiss not to admit that, although luck alone will not get an officer there, luck (the bad kind) can do him in.

So, all of you out there who think it would be fun to wear a star, by all means give it your best shot. To those of you who make it, congratulations and best wishes. See that you set an example for the next generation.

To those of you who do not, remember the yeast may make the dough rise, but the wheat is what nourishes. You remain the staple of life.

So Much for Philosophy

On a 1964 shopping trip to the base exchange at Tachikawa Air Force Base in Japan, my wife and I purchased a large paper umbrella that was beautifully decorated with colorful Japanese writing.

On the way back to our quarters, we discussed which of the many quaint Japanese philosophical sayings the written characters illustrated, and could hardly wait to ask our Japanese maid to translate for us.

We were considerably disappointed when she advised us that it read: "Tachikawa Air Force Base."

L. W. Cassell

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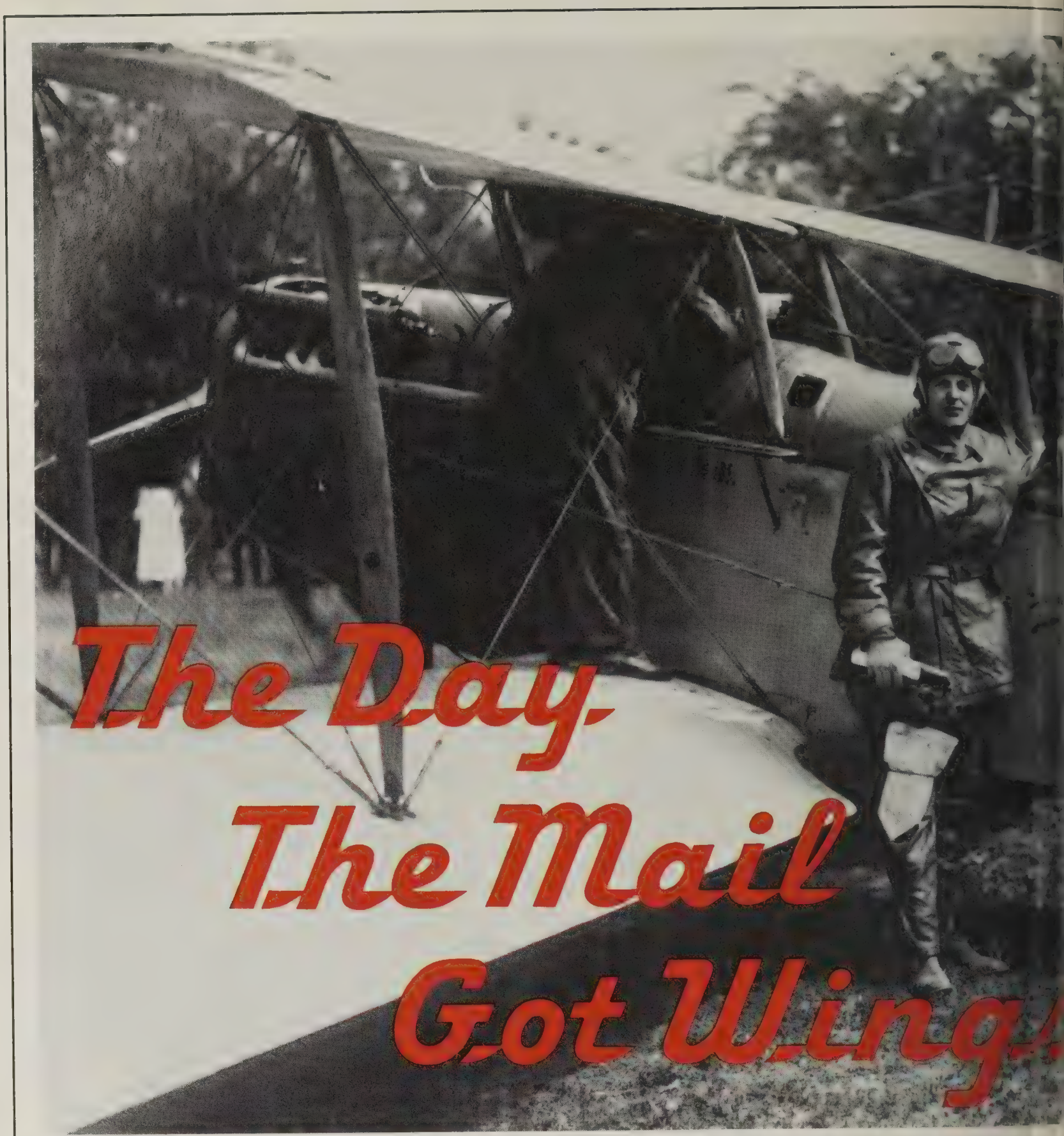
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The Day The Mail Got Wings

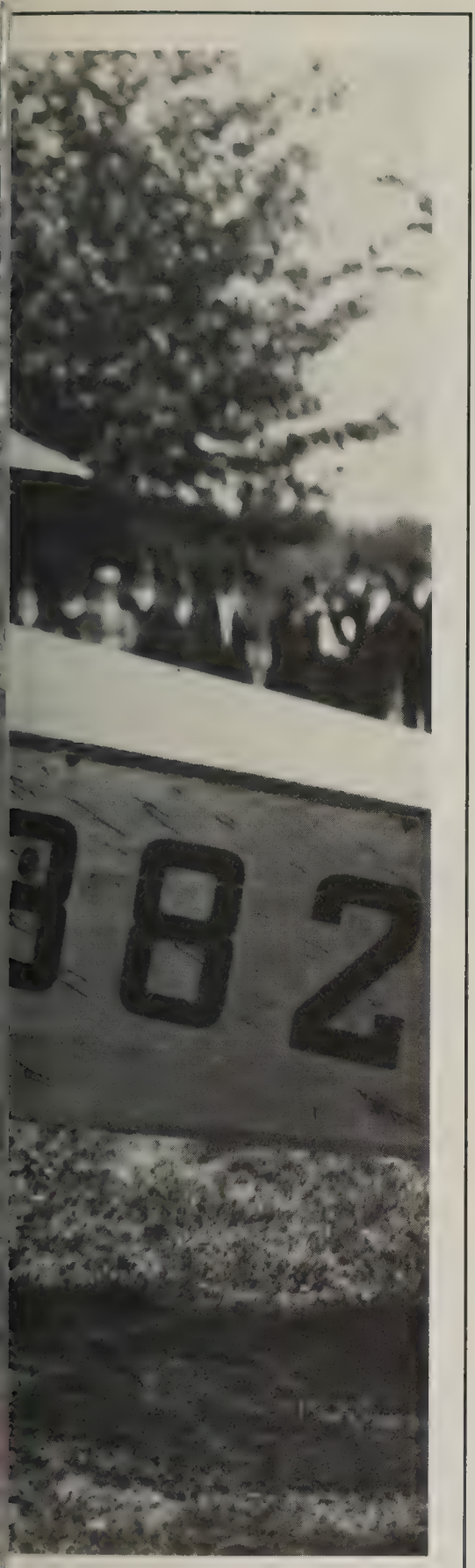
The air was hot and heavy on the polo field overlooking Washington's Tidal Basin. President Woodrow Wilson grew irritable as perspiration stung his recently burned hand. "Why can't they start that infernal engine?"

His question was directed at Otto Praeger, assistant postmaster general, who also had the seemingly dubious honor of being the first head of the newly created U.S. Aerial Mail Service. Assistant Postmaster General Praeger shook his head in silent frustration. Having no knowledge of aircraft, he had no answer for the Chief Executive.

The date was 15 May, 1918. The swel tering crowd of dignitaries had gathere in Potomac Park to witness the histori takeoff of the first airmail flight, a join project of the U.S. Postal Service and th Army Air Corps.

The plane and pilot sitting helpless on the grass were scheduled to complet the first leg of the 218-mile flight to Ne York City. Upon his arrival in Philade phia, the flyer would transfer his carg of letters to a second pilot who woul then fly another plane the final 90 mile to the Belmont Park Racetrack and lan ing field.

While the President fretted, a cre



On a warm spring day in 1918, as an irritated President and several embarrassed postal officials stood by helplessly, the fledgling U.S. Aerial Mail Service and the U.S. Army almost did not get off the ground for lack of one precious ingredient.

By Albert C. Beerbower

weating Army mechanics swung the den propeller once, twice, 50 times. hing happened. The modified Army 4D, the famous "Flying Jenny," sat si-. Her 150-horsepower Hispano-Suiza ne refused to start.

Contact."

rmy Lt. George Boyle barked the tra-nal order again and again. Redfaced miserable in his leather flight jacket, at useless in the cockpit. A savagely rmined Sgt. E. F. Waters led the me-nics through the prop-spinning pro-ire. They continued even when they their arms would break. Still nothing pened.

Sgt. Waters, a veteran of the Army Air Corps, paused to mop the moisture from his brow. He glanced in the direction of the presidential party. Never before had he known one of the big engines to fail so completely. He had to keep trying.

Capt. Ben Lipsner moved nervously back and forth beside the canvas-covered fuselage of the Jenny. As the first superintendent of the Aerial Mail Service, he was responsible for putting the reluctant craft into the sky. From the corner of his eye he saw the President turning to his bodyguards, ready to depart. The fledgling superintendent felt a cold knot tighten in his stomach.

"Get a horse."

"Next time take the train." These and other derisive comments came from the spectators as the pursuit plane, fitted with a special bin to hold mail bags, remained rooted to the earth. Those who had come especially to see the President started to drift away when they saw he was about to leave. Pressure on the policemen protecting the field began to slacken.

Sgt. Waters cursed the stubborn engine when he heard the Commander in Chief inform Postmaster General Albert S. Burleson that he had already wasted too much time and would return at once to the White House. The Hisso had roared into life at each command the previous day. The drill had been perfect. Sgt. Waters knew it was now or never. The engine had to start immediately or the whole concept of carrying mail by airplane would be jeopardized.

"The gasoline, the gasoline," a member of the ground crew was shouting excitedly. Sgt. Waters slapped himself on the forehead. Near collapse from his propeller-churning ordeal, he heard the outcry and finally remembered the fuel.

As a safety precaution—the Jenny was rightfully nicknamed the "Flying Coffin" —the gasoline had been drained from the craft the night before. In the excitement of the presidential visit, no one had thought to refill the fuel tank.

Not waiting for Sgt. Water's orders, the sheepish mechanics rushed to their truck for the tins of forgotten petrol. The President stayed his departure, intrigued by the sudden shouting and rushing about.

"Contact."

This time there was a grudging response

Right, *a modified Army JN–4D takes off from Washington, D.C., on 15 May, 1918, on the first flight of the U.S. Aerial Mail Service.* Below, *President Woodrow Wilson* (far right) *questions postal officials regarding the delayed takeoff of the first air-mail flight. Postal officials* (from left to right) *are: Otto Praeger, assistant postmaster general; M. O. Chance, postmaster, Washington, D.C.; and Albert S. Burleson, postmaster general.*





to Lt. Boyle's command. The propeller whirred and stopped. The engine sputtered and died.

"Contact."

The engine burped a cloud of greasy black smoke and roared into life. The Hisso's thunder drowned the jeers of the doubters. Once more, the curious crowd pressed against the police lines, eager to see the Jenny take off.

The young pilot drew his road map from the top of his flying boot and spread it across his lap for a final check. He adjusted his goggles and signaled to the smiling sergeant. The jubilant ground crew quickly pointed the Jenny into the faint breeze. For a moment, they sprinted alongside the wings of the moving craft as it gained speed across the playing field.

President Wilson coughed as the exhaust fumes drifted in his direction. He shaded his eyes to watch the aircraft climb into the sunlight. The low-flying plane was soon out of sight. Satisfied, the President walked to his automobile.

His letter addressed to the governor of New York was aboard the plane. The historic missive would be sold at auction in New York City to benefit the wartime effort of the American Red Cross.

With the gasoline crunch resolved, the first load of mail was airborne and on its way to Philadelphia. Unfortunately, Lt. Boyle soon lost his way and crash landed on a highway on the outskirts of Washington. His cargo was sent on to the Quaker City by rail. There, it was transferred to the second plane for the uneventful flight to Belmont Park.

It was a slow start, but the U.S. Aerial Mail Service had flown. Soon, it would point the way to the globe-girdling network we take for granted today.

ALBERT C. BEERBOWER is a retired insurance auditor and free-lance writer living in Santa Rosa, Calif.

No Beauty

My four-year-old daughter was snuggled comfortably against me one evening while we were sitting on our sofa watching television. My wife innocently commented, "You two look a lot alike."

I responded enthusiastically, "That's because we're beautiful!"

My daughter jerked away, looked up at me and said matter-of-factly, "Daddy, you're not beautiful. You're a Ranger."

CAPT. JOHN M. HOUSE

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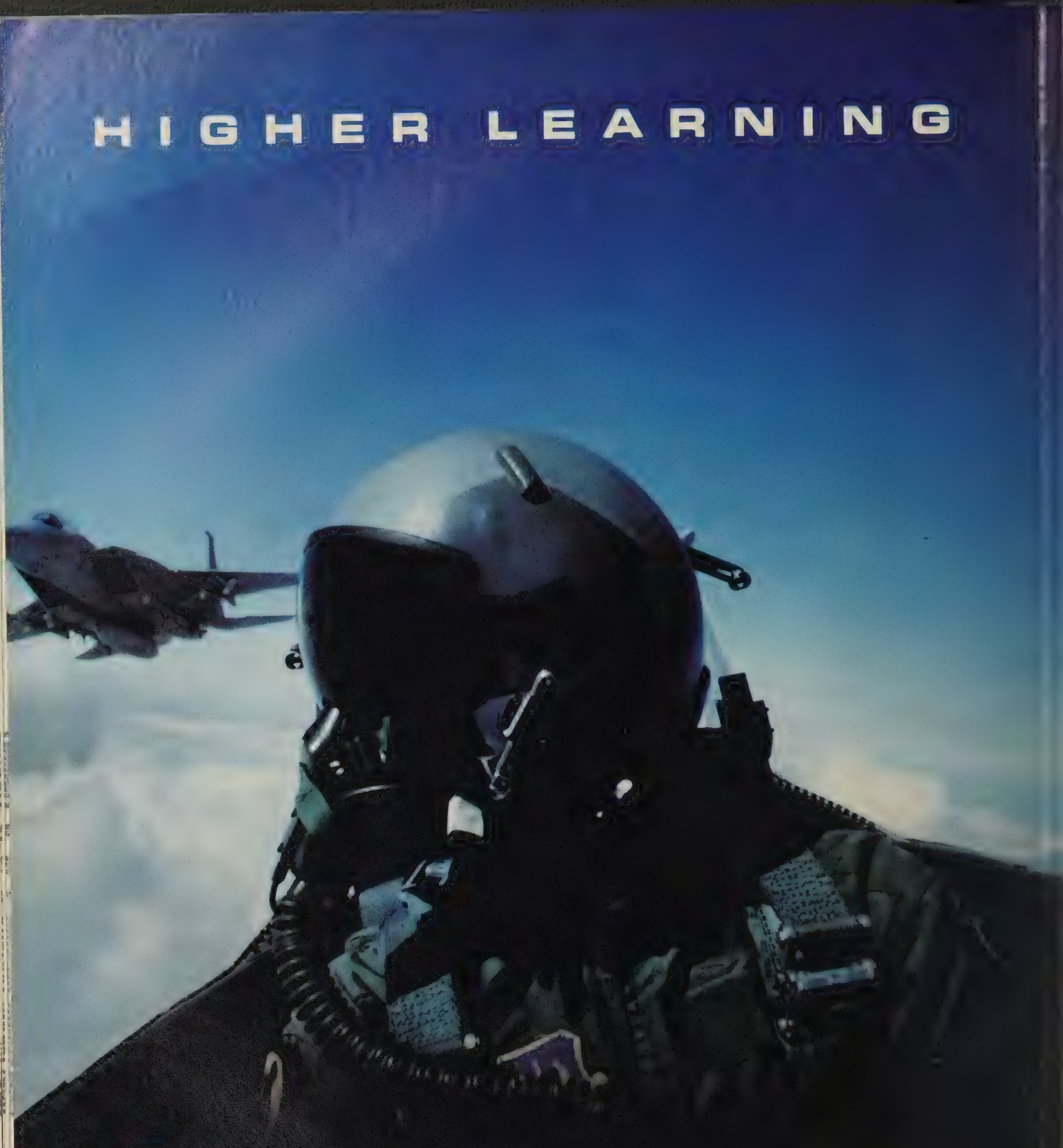
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The Forward Edge

Y MAJ. GEN. A. S. NEWMAN

culcating Martial Pride

We belong to the proudest profession on earth, the profession of arms in defense of our country. Looking back now, I have always had that special pride—the pride of being a soldier. Yet my book of familiar tations denigrates the word "pride"—from "Pride is vice of fools," to "There was pride on Casey's e . . ."—that famous day in Mudville when the hty Casey struck out.

My dictionary adds to the confusion with various initions:

1. An undue sense of our own superiority; an inordinate self-esteem; arrogance; conceit. 2. A proper sense of personal dignity and worth; honorable self-respect. 3. That of which one is justly proud; a cause of exultation. 4. The best or most excellent part of anything; the nation's pride. 5. The best time or flowering of something; the pride of summer.

Neither the quotations nor the definitions mention artial pride," that special intangible the Army strives inculcate in every soldier and in all military units. ile martial pride includes "that of which one is ly proud" in a personal sense, it goes beyond that include pride in professionalism and military heri-e.

More specifically, the martial pride of each soldier based on four elements: pride in self, pride in unit, de in service branch and pride in the nation. To iso-some realities that are the foundation of martial de, I have reviewed my case in retrospect, a method octogenarians favor as the simplest and most direct m of research.

urther, since my branch was infantry, this "reverie earch" will have a doughboy focus. Much that is tten about the Army concerns the close combat of antry: the fury and flame of battle; mud, sweat and nding fatigue; foxhole fear; and the valor of hand-nand assault. These are generously apportioned to antrymen on the battlefield and should be accorded m in the record.

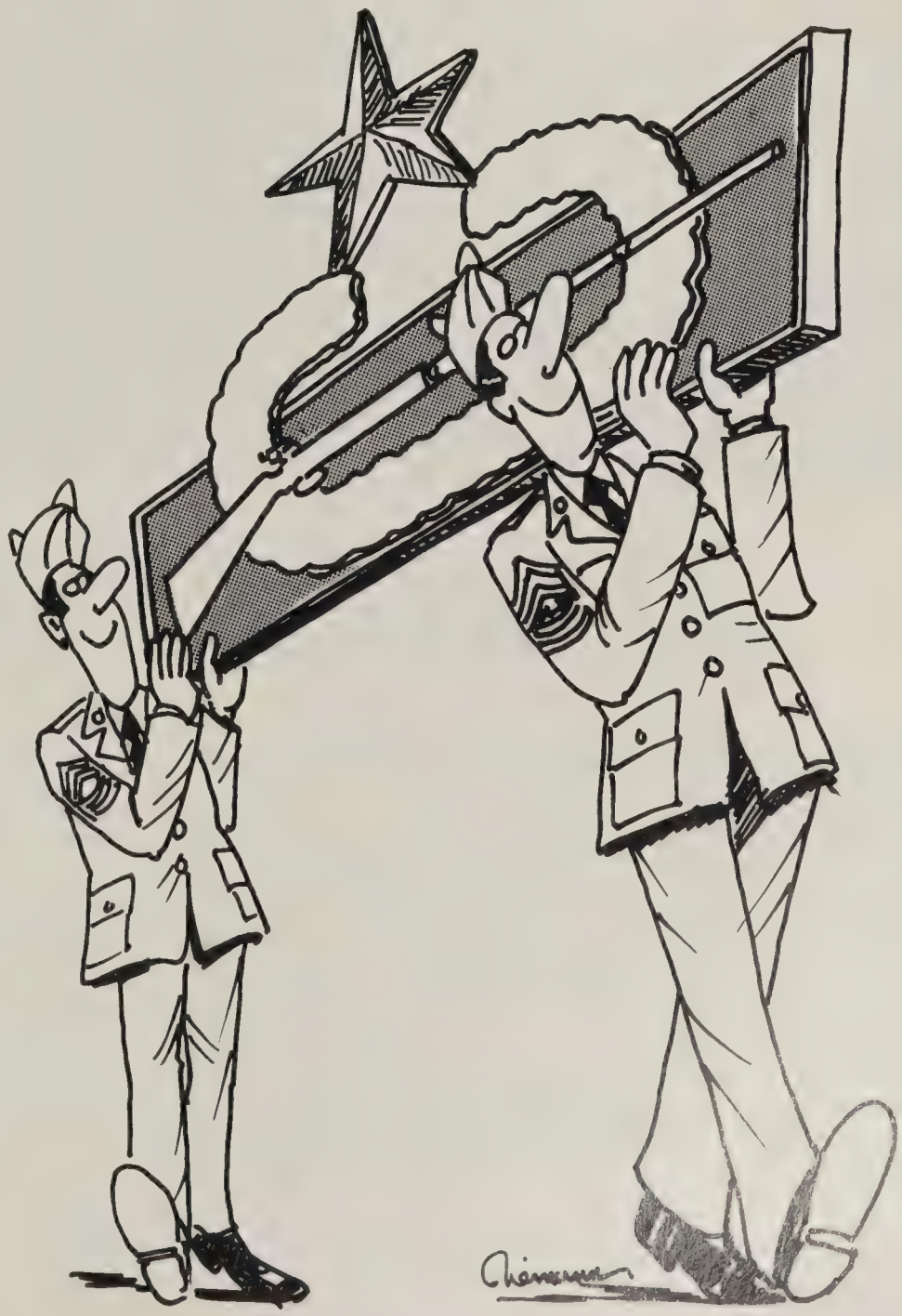
Other branches and services play their vital roles on battleground and in support operations, but we e nothing from them by recognizing the unique na-e of the infantry.

To those unfamiliar with battlefields, the infantry is ague mass of soldiers in mud-smeared uniforms and usually found where explosions, flame and violent th characterize the action—it is something heroic, personal and remote. To the battlewise infantry-n, that moving mass of "smoke begrimed men" in-cludes vital supply and supporting troops, as well as those who fight with long-range weapons and machines. But it is not crowded where he is—the cutting edge in contact.

History reveals the dramatic place of infantry in wars since antiquity. Here are some extracts from the record.

A description of the Assyrian army, seventh century B.C., reads: "There is an average of 100 foot soldiers to every ten cavalry and every single chariot; the infantry is really the Queen of Assyrian battles."

The great Napoleon Bonaparte said, "Let nothing obscure the fact that good infantry is the sinews of an army."



A summary published at the Infantry School in 1923 put it this way:

> Not in one battle nor in one campaign, not in one war nor in one century, did the infantry win the crown Queen of Battles. Enthroned 2,500 years ago, the infantryman's royal place through the succeeding ages has become fixed.

In our own War of Independence, the infantry played its historic primary role—the first armed conflicts at Concord and Bunker Hill were infantry actions. Our infantry heritage is graphically illustrated at the battle of Trenton in New Jersey, which turned an apparently lost cause into triumph and independence.

The brilliantly conceived attack on Trenton stemmed from the genius and courage of Gen. George Washington, whose early experience was in infantry fighting against the French and the Indians. The Trenton attack was launched by an infantry-artillery task force, with 2,400 men and 19 cannon—beginning with the famous night crossing of the ice-clogged Delaware River on 25 December, 1776.

This entry from Gen. Washington's diary tells its own stark story:

> Christmas, 6:00 P.M. It is fearful cold and raw and a snow storm is setting in. . . . It will be a terrible night for the soldiers who have no shoes. Some of them have rags tied around their feet, but I have not heard a man complain.

The victorious result of that daring attack stands out in history; then began the tortuous countermarch back. Before reaching their huts, Gen. Washington's men had marched and fought for as long as 50 hours, some marching as much as 50 miles in the cold. The English historian, Sir George O. Trevelyan, said of that battle:

> This was a long and severe ordeal, and yet it may be doubted whether so small a number of men ever were employed so short a space of time with greater or more lasting results upon the history of the world.

This heritage has been amplified in all of our wars since. The bright legacy of infantry was given added gloss by two legendary World War I Medal of Honor winners—Sgt. Alvin York and 1st Lt. Samuel Woodfill.

In World War II, Korea and Vietnam, infantrymen continued to make the reign of the Queen of Battle illustrious. The old Queen of Battle, with her outdated weapons, was history, but a new Queen, with new weapons and equipment, commanded those battlefields.

Gen. Paul Freeman, when commandant of the Infantry School, said:

> While a ship may symbolize the Navy and an airplane or long-range missile the Air Force . . . the only adequate symbol of our Army is man—the frontline soldier. He is not superman, but he must be a little better than most men, a little tougher in character, with stamina, guts, determination and discipline. . . .

Gen. Bruce C. Clarke said:

> Plain for all to read is a battle record which marks the American infantryman as a man in the eyes of other men. He has stamped his valor on the pages of U.S. history from the slopes of Bunker Hill to the crest of Breakneck Ridge . . . that he has borne the brunt of sacrifice for his country's sake is told in the casualty figures of all our wars. Respect for the fighting doughboy is shared by . . . all other ground soldiers, particularly those who have known and seen war. . . .

Gen. Maxwell D. Taylor said:

> As I describe the Army mission, I describe the infantry mission because the infantry will always be the core of the fighting capability of the Army. . . . I often reflected in Korea that we had complete control of the air and sea. We had tremendous destructive power in all the weapons of the Air Force and Navy, and we had a great artillery. Yet . . . victory was measured by . . . terrain objectives. . . . The last 200 yards still had to be taken by a determined man on the ground with his rifle and grenade. . . . There will always be an infantryman in the final act of battle—the man who closes with the enemy on the ground.

These quotations and the last lines of "I Am the Infantry" surpass any words of mine:

> Wherever brave men fight . . . and die for freedom, you will find me. I am the bulwark of our Nation's defense. I am always ready . . . now and forever. I am the Infantry—Queen of Battle! Follow Me!

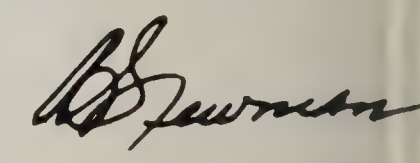
The great pride of my life is this: that under the reigning Queen of my day, I was a combat infantryman. That is how martial pride can be summed up for me, as an infantryman. Each soldier will have his own source of martial pride—from artillery to engineers, armor to aviation, signal corps to quartermaster, from airborne to general staff.

Some comments, with other branch slants:

■ Artillerymen will point to (among countless others) Napoleon's fame, beginning with the decisive actions of his batteries at the seige of Toulon (December 1793), and the brilliant young Confederate Maj. John Pelham's spectacular combat artillery actions in the Civil War.

■ Armor did not begin with Gen. George S. Patton Jr. and World War I, but traces its ancestry back through cavalry to chariots, including the climactic cavalry *coup de grace* in Hannibal's masterpiece battle at Cannae.

■ Engineer, signal corps and other branches have their special sources of martial pride which are there to be researched and chronicled. Examine the history of your branch, review your own experience and it will be the same for you as it has been for me. You will feel a renewed and greater martial pride as a soldier in the Armed Forces of the United States.





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imum Drinking Age Update

he Department of Defense (DoD) has announced three ex-ions to an earlier policy ruling requiring all military mem- who drink alcoholic beverages on U.S. installations to ply with appropriate state minimum-age drinking laws. he original policy was instituted as part of the Administra-'s drive to raise the national drinking age to 21 and there-educe the number of traffic fatalities resulting from acci-s involving young drivers who have been drinking.

he three exceptions are as follows:

Alcoholic beverages may be served to all soldiers who stationed at those remote installations where privately ed motor vehicles are not available for use by them.

Underage soldiers may be authorized drinking privileges osts where there is substantial risk of increase in the in-nce of intoxicated driving by military personnel to another allation with a lower drinking age within 50 miles or one r's driving time across a state or international line.

The Bulletin Board

The lowest general officer in a soldier's chain of com-d may authorize the serving of alcoholic drinks to under-military personnel on infrequent occasions when the entire is marking a unique military event. The event must be on an Army post, the soldiers must be in a nonduty sta-and appropriate controls must be in place to prevent en-gering the soldiers or the surrounding community.

ial EERs Eliminated

he requirement for initial enlisted evaluation reports (EERs), reby soldiers are rated three months after promotion to has been eliminated in an effort to reduce the Army's ad-istrative work load, according to a personnel spokesman. he requirement originated from a provision of Army Regu-n (AR) 623-205, the "Enlisted Evaluation Reporting Sys-." All other provisions of AR 623-205 remain in effect. Of-ls note that military personnel offices receiving initial EERs return them to the raters as unauthorized.

ternity Policy Revised

regnant soldiers going on maternity leave no longer have option of choosing between civilian and military medical ities when deciding where they will deliver their babies, rding to an official from the Army Surgeon General's of-

reviously, the Army had granted pregnant service mem-the opportunity to take leave during the latter stages of pregnancy and have maternity care and child delivery in ian facilities at government expense.

owever, a review of that policy by the Department of the y revealed that it was inconsistent with those of the Air e and Navy, and thereby "unacceptably discriminatory in it permitted pregnant female members [of the Army] to t to take care from civilians while specifically denying e privileges to other active-duty members."

his change in policy does not alter the military member's t to take leave and deliver her child in a military medical facility in the vicinity of her leave address. If she wishes to be provided with civilian medical care, it will be at her own expense.

Article 15 Deadline Withdrawn

The Department of the Army has decided to drop the three-year time limit established for allowing soldiers to submit petitions to have Article 15s transferred from the performance portion of their records to the restricted portion.

Under the current provisions of Army Regulation (AR) 27-10, 31 October, 1985, was the deadline for petitioning Article 15s received before 1 November, 1982, by those serving in grades E6 and above on that date, to include officers and warrant officers. That time limit, however, will not be put into effect before the September 1985 update of AR 27-10, which will remove the time limitations.

According to the DA Suitability and Evaluation Board, which adjudicates Article 15 petitions, time limits serve no useful purpose and could act to the detriment of some soldiers. This change does not nullify the board's policy of returning petitions without action unless at least one year has passed and one nonacademic evaluation has been received since the Article 15 was imposed.

VA Benefits Handbook Available

The 1985 "Federal Benefits for Veterans and Dependents" handbook has been published and is now available.

The 88-page handbook contains information on medical care benefits, education, compensation, pensions, insurance, home loan guaranties, job training and burial assistance. Under medical care, the booklet describes benefits for veterans who were exposed to agent orange and radiation, and those suffering from posttraumatic stress disorders. Employment assistance and other Department of Labor benefits are outlined, as well as those benefits provided by the Department of Defense and other government offices.

The handbook includes the addresses and local telephone numbers of all Veterans Administration (VA) offices, medical centers, national cemeteries, Vietnam veteran counseling centers and other VA facilities. The booklet may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, for $2.50 under stock number 051-000-00170-2.

Student Travel Program Streamlined

The Army's Military Personnel Center (MILPERCEN) in Alexandria, Va., is processing all requests for travel by students eligible to join their military families overseas under the newly centralized student-funded travel program. The student travel entitlement allows the student one round trip each year between the United States and the sponsor's overseas duty station.

Under the previous program, stateside military personnel and transportation offices, often working independently, had to handle most of the administrative details. Communicating with students who were not near military posts was difficult and many parents did not know when their children were scheduled to arrive overseas.

To eliminate these problems and centralize travel procedures, MILPERCEN has taken complete charge of the program. Overseas commands and students may now contact a single office by calling Autovon 221-8979, 221-9243 or toll-free 1-800-582-5552.

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)fficer Development Program :mphasizes Schools, Mentors

'he Army's professional officer devel-nent system (PODS) is undergoing a or change of emphasis which estab-es mandatory schooling for career gression and shifts more of the re-nsibility for individual development m the schools to unit leaders. Chief of ff Gen. John A. Wickham Jr. has ap-ved 116 changes to the PODS formu-d by the 30-member professional offi- development study group which has n carefully examining the system for past two years.

n the course of its study, the panel nducted two detailed surveys, one so-ting responses from 333 general offi-s and the other from more than 14,000 nmissioned officers in the grades lieu-ant through colonel. The surveys formed ase of information from which the dy group would determine the current us of the officer corps, develop poli-s to meet the leadership needs of the t 40 years and recommend appropri- changes to the present PODS.

One of the major recommendations egorizes the officer development pro-s into seven distinct levels and estab-es requirements for advancement from e level to the next. The levels, or peri-s in an officer's career, are: pre-com-ssioning; lieutenant; company grade ptain); field grade (major/lieutenant onel); colonel; brigadier general/major neral; and senior general officer (lieu-ant general/general).

At the pre-commissioning level, the dy group has proposed the tightening commissioning standards to ensure t officer candidates have the neces-y academic skills to perform their du-s. This proposal has been approved h the understanding that it be closely nitored by the Reserve Officer Train- Corps study group currently in ses-n.

Active-duty lieutenants will attend a sic officer course, followed by assign-nt to a branch-related unit for a mini-m of 18 months. Officers selected for motion to captain must attend an of-er advanced course before assuming npany command.

Beginning in fiscal 1987, all regular Ar- and reserve components captains will required to attend the Combined Arms vices Staff School at Ft. Leavenworth, n., before their ninth year of service. ptains will not be eligible for an ad-ional specialty assignment until they ve qualified in the company-level op-tions of their branch.

All active-duty majors will be provid-ed a command and general staff college-level education, either resident or non-resident, with completion of the course being a prerequisite for promotion to lieutenant colonel. Senior service college-level study will be made available to those officers selected for promotion to colonel, but it will not be a prerequisite to such promotion.

The present orientation program for brigadier generals will become a formal transition program of from four to six weeks and will include special instruction to prepare the officer for his first subsequent assignment. Senior general officers, including those selected for promotion to lieutenant general, will be provided from four to six weeks of executive development in preparation for new assignments.

News Call

In addition to this sequential and progressive system of officer schooling and training, the study group has noted that "the responsibility for officer development is shifting from the school to the individual officer and the focus is shifting from individual to unit excellence." This is accomplished through mentoring, whereby unit commanders as well as course instructors develop those officers under their charge through coaching, teaching and advising.

The report on the results of the officer development surveys discussed the concept of mentoring at length. According to the report, 88 percent of all officers surveyed felt Army officers should be mentors and role models first. Only 41 percent of the survey respondents said they currently had a mentor. Ninety-six percent of those surveyed feel that commanders should be rated on their performance as mentors when being evaluated.

"Officers must think and talk more about leadership, and practice more frequently a teaching and caring style of leadership that enhances the effectiveness of the chain of command," noted study officials.

"Army leaders, regardless of age or grade, are expected to use a mentorship approach to leading and developing subordinates," they added. "Factors such as the differences in educational level and training received by commissioned officers will provide a basis for even the youngest officer to use a mentorship style in leading soldiers and NCOs who are as old or older than the officer."

A significant portion of the survey respondents reported that the "special efforts of a commander to mentor, coach and teach them had been the developmental experience making the greatest contribution to their professional development." The battalion commander was most often named as the person "playing the biggest role in shaping professional military values."

In line with the new focus on nurturing subordinate officers and seeking unit over individual excellence, two thirds of the officers in the survey said, "officers need to further emphasize and model the concept of selflessness over personal gain."

Breakout Tactic Cuts Costs. The Army Materiel Command (AMC) has reported savings of more than $130 million for the first half of fiscal 1985 through a method of procurement known as "breakout," under which competition for needed supplies is opened up to previously unconsidered potential manufacturers in the future. The savings usually occur when a product which had been obtained through sole source procurement is bid on a competitive basis.

Examples of some of AMC's cost cutting successes include:

- A challenge to a sole-source requirement for a spare part resulted in receipt of seven competitive bids and a 73 percent savings of $10,265.
- The addition of one source to a bidder's list for the manufacture of the M21 ballistic computer for the M60A3 tank resulted in a bid that was $1,424 lower for each unit and total savings of nearly $386,000.
- The price of an air filter for cargo vehicles was questioned and it was determined that an alternate manufacturer could supply a suitable replacement for less than half the original price, which led to savings in excess of $740,000.

ERADCOM to Become LABCOM. On 1 October, the U.S. Army Electronics and Research Command (ERADCOM) at Adelphi, Md., will be converted in place to form the nucleus of the new U.S. Army Laboratory Command (LABCOM). This change follows an Army study seeking ways to improve the quality, productivity and effectiveness of its laboratory system.

The LABCOM mission will be to manage the Army's technical base, to improve the effectiveness of the Army Materiel Command's research and development efforts, and to provide support for the Army's readiness and force modernization program. ERADCOM was created in 1978 to develop the technology and provide the electronics and electro-opti-

cal materiel needed to win on the battlefield.

Army officials describe the change as internal organizational realignments and say "no adverse personnel impacts are anticipated."

Medical Tests for Reserves. The Army has begun a medical screening program for members of the National Guard and Reserve who are 40 years of age and older to determine their physical fitness.

A pilot program is being conducted in Virginia by the Army surgeon general's task force on fitness. More than 1,300 members of Virginia's Army National Guard and Army Reserve are taking part in this voluntary program. Depending on the results of the pilot program, a national mandatory program could be implemented as early as 1986.

Through a series of tests and examinations of case histories, medical officials hope to determine the effects of physical conditioning and its correlation to coronary disease. Information obtained from the program is being tabulated and retained in the Army's computerized coronary database, one of the largest in existence, located at the Armed Forces Institute of Pathology in Washington, D.C.

New Reserve Training Strategy. The Army Reserve's 76th Division (Training) will be the first Army Reserve training division to process troops and then train them through a complete cycle as part of a special program being conducted this summer at Ft. Campbell, Ky., titled "On-

GENERAL OFFICER CHANGES



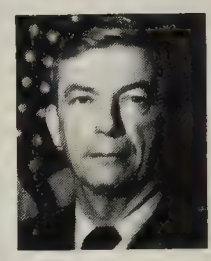
Lt. Gen. H.G. Crowell Jr. from CG, 3rd Inf. Div. (Mech), to CS, USEUCOM.



Lt. Gen. T.F. Healy from Comdt, USAWC, to CS, AFSOUTH.



Maj. Gen. E.M. Aguanno from ADUSD(TWP), OSD, to D–J4/J7, USEUCOM.



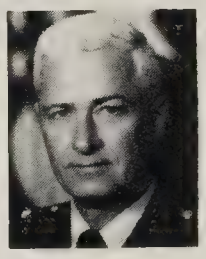
Maj. Gen. J.S. Crosby from CG, USAFACFS/Comdt, USAFAS, to DMPB, ODCSPER.



Maj. Gen. V.E. Falter from CG, MILPERCEN, to DDOA, DNA.



Maj. Gen. T.P. Graham from ADC, 4th Inf. Div. (Mech), to CJUSMAG–YK.



Maj. Gen. R.D. Kenyon from ADCSRDA, DA, to CLL, OSA.



Maj. Gen. W.G. O'Leksy from DMPB, ODCSPER, to DMPM, ODCSPER.



Maj. Gen. B.D. Patrick from CLL, OSA, to CG, 101st Abn. Div. (A/A).



Maj. Gen. R.J. Price from DCSRM, USAREUR, to DCSOPS, USAREUR.



Maj. Gen. H.J. Quinn from CJUSMAG–YK, to DCG, Second USA.



Maj. Gen. I.D. Smith from ADC, 1st Armd. Div., to DCSOI, AFCENT.



Maj. Gen. G.R. Stotser from DCSOPS, USAREUR, to CG, 3rd Inf. Div. (Mech).



Maj. Gen. J.E. Thompson Jr. from CG, 101st Abn. Div. (A/A), to Comdt, USAWC.



Maj. Gen. F.J. Toner from D–J4/J7, USEUCOM, to DDSM, J4, OJCS.



Maj. Gen. A.G. Wheeler from CG, 2nd SUPCOM(C), NWG, to Comdt, ICAF.



Maj. Gen. O.R. Whiddon from DCSOI, AFCENT, to CG, 8th Inf. Div. (Mech).

Brigadier Generals: **G.H. Akin** from DCLAA, USALOGC, TO ACS, G4, Eighth USA; **C.J. Archer** from DCG, USAC&MPC/Comdt, USAMPS, FMA, to CG, MEPCOM, GLI; **R.D. Beltson** from DCD, USAFAS, to DC-A&M, USAAMCC/Cdr., USAAR&DC, DNJ; **P.H. Brady** from IG, I Corps & FL, to CS, First USA; **W.J. Fiorentino** from BMDDPM, OCS, DA, to D-ASISG, FLK; **C.E. Honore** from DCS-S, CENTAG, SWG, to ADC, 3rd Inf. Div. (Mech); **N.S. Krawciw** from ADC, 3rd Inf. Div. (Mech), to Exec. to SACEUR; **E.R. Lanzillo** from ADD-IN, PPD, J5, OJCS, to DDPR, J4, OJCS; **W.B. McGrath** from DDPR, J4, OJCS, to CG, 3rd SUPCOM(C), FWG; **R.L. Reynard** from C-SLD, OCLL, OSA, to DComdt, USAWC; **D.H. Stem** from AComdt, USAMPS, to DCG, USAC&MPC/Comdt, USAMPS.

■ ***AFSOUTH**—Allied Forces Southern Europe; **ADUSD(TWP)**—Assistant Deputy Under Secretary of Defense (Tactical Warfare Programs); **USAFACFS**—U.S. Army Field Artillery Center and Ft. Sill; **DMPB**—Director for Manpower Programs and Budget; **DDOA**—Deputy Director for Operations and Administration; **CJUSMAG–YK**—Chief, Joint U.S. Military Assistance Group, Yongsan, Korea; **ADCSRDA**—Assistant Deputy Chief of Staff for Research, Development and Acquisition; **CLL**—Chief, Legislative Liaison; **DMPM**—Director for Military Personnel Management; **DCSRM**—Deputy Chief of Staff for Resource Management; **DCSOI, AFCENT**—Deputy Chief of Staff for Operations and Intelligence, Allied Forces Central Europe; **DDSM**—Deputy Director for Strategic Mobility; **2nd SUPCOM(C), NWG**—2nd Support Command (Corps), Nellingen, West Germany; **DCLAA, USALOGC**—Deputy Commander for Logistics Automation and Analysis, U.S. Army Logistics Center; **USAC&MPC**—U.S. Army Chemical and Military Police Centers; **FMA**—Ft. McClellan, Ala.; **MEPCOM, GLI**—U.S. Military Enlistment Processing Command, Great Lakes, Ill.; **DCD, USAFAS**—Director of Combat Development, U.S. Army Field Artillery School; **DC-A&M, USAAMCC**—Deputy Commander for Armaments and Munitions, U.S. Army Armament, Munitions and Chemical Command; **USAAR&DC, DNJ**—U.S. Army Armament Research and Development Center, Dover, N.J.; **FL**—Ft. Lewis; **BMDDPM**—Ballistic Missile Defense Deputy Program Manager; **D–ASISG, FLK**—Director, Army Space Initiatives Study Group, Ft. Leavenworth, Kan.; **DCS-S, CENTAG, SWG**—Deputy Chief of Staff for Support, Central Army Group, Seckenheim, West Germany; **ADD–IN, PPD**—Assistant Deputy Director, International Negotiations, Plans and Policy Directorate; **DDPR**—Deputy Director for Planning and Resources; **C–SLD**—Chief, Senate Liaison Division.*

ay Eagle." The 76th Division (Train-) is establishing a "mobilization-Army ning center" at its mobilization sta- ı at Ft. Campbell, where it will utilize < force size elements representing an ire Army training center structure.
The six-phase concept of this opera- ı calls for the 4074th Reception Sta- ı to set up operations at Ft. Knox, ere the unit will process some 925 re- tees, 600 of whom will then be trans- ted to Ft. Campbell, about four hours ay. There they will go through the ba- training program of instruction for next eight weeks. At the end of the ning cycle, the division G3 section, ality Test Branch, will test the new diers to determine their pass/fail sta-

Army officials feel that, if this training ıcept is successful, it will provide the vice a much needed way of training annual "summer surge" of basic train- who flood into basic training centers r graduating from high school or col- e.

sults of Missile Probe. An Army in- tigation of the accidental burning of a shing II missile first-stage rocket mo- which killed three soldiers earlier this r in West Germany has determined t a discharge of static electricity with- the propellant of the rocket motor sed the unexpected fire. The study re- led that the Pershing II propellant be- nes sensitive to electrostatic charges ler a particular set of low temperature l humidity conditions.
As a result of the investigation, the ny has introduced modifications into production line of Pershing II equip- nt which are designed to prevent any ldup of electrostatic charge on the ket motors and to improve the ground- system to prevent the storage of any trostatic charge that may be induced. During the investigation, the training ivity of Pershing units has been re- ed as safety modifications have been de on the system. Restoration of the ular training schedule will follow com- tion of those modifications.

DARM Successfully Fired. Two se-and-destroy armor (SADARM) artil- projectiles developed by Honeywell's ense Systems Division have scored on M47 tank targets after being fired n eight-inch howitzers during develop- nt testing at Yuma Proving Ground, z. The test is being conducted by the . Army Armament Research and De- opment Center, Picatinny Arsenal, N.J. ADARM is an artillery-delivered sub- nition designed to sense and destroy my armored vehicles during a para- te-controlled descent. After being fired m its artillery tube, the projectile sep-



Maj. Gen. John J. Ricottilli Jr., commander of the 76th Division (Training) (left) *goes over plans for a new initial entry reserve training program concept known as 'Onaway Eagle' with the division G3, Lt. Col. Eddi Z. Zyko, at division headquarters in Hartford, Conn.*

arates into three submunitions, each of which has its own vortex parachute and sensor device. As the SADARM sensors descend over the target area, they scan the ground in a decreasing circular pattern, "lock in" on their targets and activate their warheads, firing their submunitions at the thin overhead armor plate of the enemy's tanks.

This smart weapon system, with its "fire and forget" capability, is currently in the advanced development stage and will enter engineering development later this year. Aerojet Electrosystems Co., a subsidiary of Aerojet General Corp., is in competition with Honeywell Inc. for development of the SADARM weapon system in the eight-inch projectile range. The system has potential applications in several tube and rocket artillery systems.



A technician examines the inner workings of a SADARM (sense-and-destroy armor) sensor developed by the Defense Systems Division of Honeywell Inc. Fired from an eight-inch howitzer, the SADARM projectile separates into three submunitions with sensors which, held aloft by specially designed parachutes, are able to scan a target area below, "lock in" on a target's center and activate the submunition warhead. The weapon completed two successful firings on M47 tank targets at close range during tests earlier this year at Yuma Proving Ground, Ariz.

Special Forces Lieutenants. The Army's Military Personnel Center is accepting a limited number of applications from lieutenants for assignment to one of four Special Forces groups of the 1st Special Operations Command (SOCOM) through September 1986.

Officers who want to volunteer for Special Forces training must meet the following qualifications:

- Be a combat arms or combat support arms officer.
- Be a first lieutenant as of the projected reporting date to 1st SOCOM and for a period of 12 months afterward (not including the five-month qualification course).
- Have 18 months experience in the primary branch with a permanent (table of organization and equipment) unit.
- Meet the requirements listed in Army Regulation (AR) 614-162, outlining the assignment of officers to Special Forces organizations, if the candidate does not have a Special Forces additional skill identifier.
- Have the endorsement of the command to which the officer is assigned.

Officers selected for Special Forces training and assignment will be sent to a five-month course in special operations at the John F. Kennedy Special Warfare Center, Ft. Bragg, N.C., followed by assignment



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one of the four Special Forces groups. Officers designated for 1st SOCOM assignment may have their stabilized tours tailed if they are stationed within the ntinental United States, but not if serv- overseas. Lieutenants interested in s program may submit their requests accordance with AR 614-162 after ntacting their battalion adjutants.

ditions to Vietnam Memorial. Repentatives from the Vietnam Veterans morial Fund are considering adding names of more than 300 U.S. aviaes to the Vietnam Memorial in Washton, D.C. The airmen whose names y be added were killed en route to or m combat missions over Vietnam or rounding territories.

Currently, the Vietnam Memorial indes only the names of those killed in "hostile fire" zone, which has been ssified by the Department of Defense North Vietnam, South Vietnam, Camdia, Laos and adjoining coastal waS. DoD estimates that some 330 serce members were killed when their airft went down outside the hostile fire ne, but during the performance of a mbat mission in the Vietnam theater.

Consideration of the name additions the memorial was prompted by an Air ce inquiry from congressmen repreting a family who lost a son outside official combat zone and could not derstand why his name was not inded on the memorial.

p Army Installation Named. Ft. , Okla., has been selected as the Arrecipient of this year's Commander-Chief's Award for Installation Excelce. The award was established a year by President Reagan to recognize the orts of the military and civilian pernel who operate and maintain mili installations. Ft. Sill was chosen by Army panel as the installation that de the best use of its resources to supt both mission and people.

etta Contract Awarded. The Army awarded Beretta U.S.A. Corp., Aceek, Md., a $9.4 million fixed-price tract to produce the first increment of service's new 9-mm personal sidearm. hough the Army had announced sev- months ago that Beretta was the ner of its handgun competition, offiawarding of the contract had been ayed pending the outcome of legal llenges raised by one of the other petitors. Beretta is to produce a total 315,930 handguns over the next five rs. The total value of the contract is rly $56.4 million.

The contracting activity is the U.S. ny Armament, Munitions and Chemi- Command, Rock Island, Ill.



Reflection off the black granite wall of the Vietnam Veterans Memorial in Washington, D.C.

Hellfire Missile Ground Fired. The Hellfire antiarmor missile, originally developed for use with helicopters, has demonstrated its surface-to-surface attack capabilities in ground-launch tests conducted at Ft. Bliss, Tex.

During three test firings of the missile from a U.S. Army truck in a hidden ground position, it scored three hits. The Hellfire was launched in both the lock-on-after-launch mode and the lock-on-before-launch mode. Each tank target was laser illuminated with a ground laser locator designator by a forward observation lasing team.

The Hellfire antiarmor missile system, a product of the Missile Systems Division of Rockwell International Corp., is presently being qualified with the UH-60A Blackhawk transport helicopter.

Phone Systems Upgraded. The Army has awarded two contracts worth $9.1 million to GTE Communication Systems Corp. to install military-version GTD5 EAX digital telephone switching systems at Ft. Bragg, N.C., and Ft. Gordon, Ga. Four of the telephone systems, used to process and route calls, will go to Ft. Bragg and one will go to Ft. Gordon.

The new telecommunication systems will expand Ft. Bragg's telephone capacity to 25,000 ports and Ft. Gordon's to 16,000. The system will provide local services, interface with the Federal Telephone System—the government's private network, Autovon—the Department of Defense's private network, and the Public Switched Network.

The Ft. Bragg and Ft. Gordon systems are the largest the Army has procured to date under its base modernization program, which has included the installation of GTD5 EAX systems at Picatinny Arsenal, N.J., and Aberdeen Proving Ground, Md.

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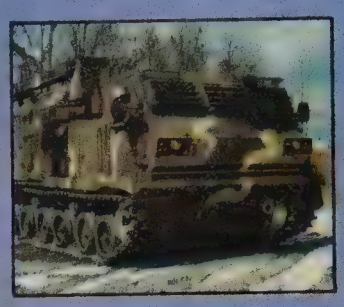
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iography as History: MacArthur's Final Years

Years of MacArthur: Triumph and isaster, 1945–1964. *D. Clayton James. oughton Mifflin Co., 2 Park St., Bos-n, Mass. 02108. 848 pages; maps; il-strations; notes; bibliography; index; 29.95.*

By Col. Stanley L. Falk
U.S. Army Reserve, retired

as few men in this nation's history, General of the Army Douglas Mac-hur all but dominated the American tary scene for half a century. A 38-r-old general in World War I, then su-ntendent of the U.S. Military Acade-Army chief of staff from 1930 to 5 and, after his retirement, field mar-

Books

l of the Philippine Army, Gen. Mac-hur on the eve of World War II had ady completed a full career of which soldier could be proud.
ecalled to active duty by President nklin D. Roosevelt in 1941 to com-nd U.S. forces in the Far East, the 61-r-old general embarked on a second er that stretched through two more s and the U.S. occupation of Japan. en this way of life ended suddenly in 1 with his relief from command by sident Harry S Truman, he continued e active in business and as a spokes-n for conservative causes until his th in 1964.
few years later, a relatively young undistinguished professor of histo-at Mississippi State University began k on a monumental biography of . MacArthur. The first widely praised me of this study, covering the long od until the outbreak of World War appeared in 1971. It was followed in 5 by an equally acclaimed volume on war years.
his is the third and last volume, de-oing the final period of the general's It is a fitting capstone to a superb rt which firmly establishes Professor es as an outstanding military biogra-r.
ike the two preceding volumes, this blends history and biography in a inating, well-written narrative. The hor's solid research is evident through-as is his thorough understanding of . MacArthur's complex and enigmatic sonality. Author James's account is anced, objective and comprehensive.



Gen. of the Army Douglas MacArthur

If he has not completely settled every controversy concerning the general, he has certainly provided sufficient facts and cogent analysis to allow readers to draw their own conclusions.

There are actually three stories in this volume: the U.S. occupation of Japan, the grim Korean War and the relief of Gen. MacArthur, and the final, almost bittersweet period that the author calls "Fading Away," which covers the general's last years.

Although there are many published accounts of the occupation of Japan, few of them tie together so well the myriad aspects of that complex period. The author's focus is, of course, Gen. MacArthur, but the general so symbolized the occupation that the two thirds of the book devoted to that subject constitutes a major new intepretation of it and early post-war Japan.

Professor James provides a fascinating picture of Gen. MacArthur's leadership of the occupation, of the economic, political and social reforms he instituted, and of the impact these changes and the general himself had on the Japanese. Highlights of the general's personal life are incorporated, including his continued flirtation with the possibility of running for the U.S. presidency.

The author makes clear how much of the occupation's success rested on strong guidance from Washington and how much rested on Gen. MacArthur's skillful implementation. One point not generally realized is that the respect enjoyed by the general among leading American conservatives was a crucial factor in maintaining congressional support of the goals and policies of the occupation. Without it, suggests the author, neither the occupation reforms nor the vital U.S. relief and economic assistance provided Japan might have been possible.

The bitterness of the Korean War for Gen. MacArthur is reflected in the title of this volume. The triumphs of the successful Pusan defense, the Inchon landing and the invasion of North Korea were matched by the disaster of the Chinese intervention and the general's relief from command. Professor James treats these developments objectively, critically and with sensitivity.

In the end, he concludes, Gen. MacArthur may have been driven by his own "furies of self-destruction." The author also suggests that part of the blame for some of the military setbacks must fall on the Joint Chiefs of Staff "for not holding a firmer leash on their aggressive far eastern commander."

The final portion of the volume takes the reader through Gen. MacArthur's triumphant return to the United States and his final years on what the author refers to as "the periphery of power." Here, too, the many sides of the general are illustrated, including his final, movingly eloquent address to West Point cadets, which exceeded in emotion and inspiration his dramatic speech to Congress 11 years earlier. It is a fitting conclusion for this magnificent biography.

COL. STANLEY L. FALK, U.S. Army Reserve, retired, Ph.D., was formerly deputy chief historian for Southeast Asia at the U.S. Army Center of Military History and is the author of five books on World War II.

Canada in WWII

Candid Memoir: 'Lively Account'

A Date With History. *C. P. Stacey. University of Toronto Press, 5201 Dufferin St., Downsview, Ontario, Canada M3H 5T8. 293 pages; photographs $24.95 Canadian*

By J. D. Strickland

When World War II broke out in 1939, Charles Stacey was one of the few Canadian historians available who also had a firm grasp of military affairs, and it was almost inevitable that he should be chosen to head the Canadian Army's endeavors to record its story.

Yet it was not an easy story to record.

London during the blitz provided its fair share of inconveniences, but the politicking of generals and politicians did much to slow progress on the work. Moreover, the British generals, especially Gen. Sir Bernard L. Montgomery, could not understand the Canadian generals' insistence that they were responsible to their own government in Ottawa.

Yet, as Mr. Stacey rightly points out, Canada has never fought a war on its own, but rather always in conjunction with other, greater powers. Clearly, that affected its own conduct in the war, as well as the willingness of others to cooperate with its official historian after the war.

Still, the result of all that work was most impressive: first, a general overview of the war designed for the lay reader, followed by the official three-volume account and then, finally, by a general work on Canadian war policy.

The author began work on these volumes immediately after the war, and the last was published in 1971. By any reasonable standard, they are a remarkable achievement and a fine testament to the Canadian war effort.

Almost without meaning to, Mr. Stacey also gathered about him some superb lieutenants. Several noted war artists and the historians George F. G. Stanley and Gerry Nicholson, plus many others, contributed to the official history.

A Date With History is a memoir. Mr. Stacey makes candid observations about those he worked for and about those who worked for him. His remembrances of his travels through France with Prime Minister Mackenzie King may amaze and disturb the reader.

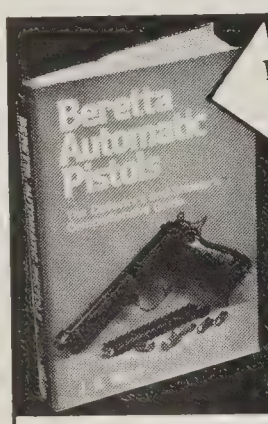
He is frank but remains a gentleman. His intent is neither to praise nor to damn. He records the truth as he saw it.

Without Charles Stacey and his colleagues, Canadian military history would not have reached the degree of sophistication it has. This is a literate, lively account of how that achievement came about. It is a fascinating book.

J. D. STRICKLAND is a free-lance writer who lives in Ottawa, Ontario, Canada.

As a service to readers interested in obtaining books reviewed in *ARMY*, the mailing address of the publisher is included in the head notes for each main review and Varied Fare item. Readers are reminded that neither *ARMY* nor AUSA has the facilities to order books for them or to handle the related correspondence; inquiries and orders must be directed to the publisher.

The Editors



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Personal Vision and Social Change

General Hershey and the Draft

Lewis B. Hershey, Mr. Selective Service. *George Q. Flynn. University of North Carolina Press, Box 2288, Chapel Hill, N.C. 27514. 386 pages; illustrations; index; $24.95.*

By Lt. Col. Robert K. Griffith Jr.

In 1936, Maj. Lewis B. Hershey went to Washington, D.C., to begin what he expected would be the terminal assignment of his regular Army career in the G1 office of the Army staff. He was right, but his timetable was a little off. By the time he was forcibly retired as a full general in 1973, Lewis Hershey had served 62 years of active military duty.

He served 33 years as director of the Selective Service System under six Presidents and inducted over 14.5 million men into the armed forces. He considered the task of his office "one of the most thankless jobs we can imagine," but he devoted his life to it and, in the process, became the symbol of the draft in America.

In this biography, the first historical treatment of the Cold War draft to be published, author George Q. Flynn, a professor of history, draws on an impressive array of official and private sources to show how Gen. Hershey shaped the organization with which he became so closely identified.

Author Flynn is balanced in his treatment of Gen. Hershey. In fact, it is difficult to tell how he feels about his subject. He admires him for his skill as an administrator and bureaucrat but faults him for his narrowness of vision. If he is ambivalent, he is not alone.

Lewis Hershey personified the draft and the Vietnam war for a generation of draft-age Americans. Readers who remember the Vietnam-era Lewis Hershey will be surprised to learn that Americans who lived through World War II and Korea, including those subject to conscription, generally considered the draft necessary, and its administration by Gen. Hershey fair. Professor Flynn is dealing with the same man; but, as he demonstrates, while Lewis Hershey remained a relative constant, the draft and America changed.

Gen. Hershey's image of American so



ciety shaped the draft and his administration of the Selective Service System. He cherished a vision of small-town communities where local elites decided local issues. His experience in the Indiana National Guard and his belief that professional armies posed a danger to democracy convinced him that an army of citizen-soldiers best served the nation's interests.

As a National Guard recruiter during the partial mobilization of 1916 and from his observations of the mobilization for World War I, Gen. Hershey concluded that volunteerism was wasteful. When he had the opportunity to put his ideas to work, he crafted a system that combined the virtues of his curious blend of nineteenth century myths and progressive concepts.

The men who would serve in his citizen army were to be selected by the local elite of their communities. As the author shows, he defended his system dogged against the centralizing tendencies of the government by cultivating followings on both national and local levels.

ccording to his biographer, Lewis shey's undoing resulted from his fail- to understand that selective service, was to survive, had to change with nation. His vision of a small-town erica was flawed even by 1940. By 1960s, it was more myth than reality. believed that materialism, strains on family and failure by elders to trans- values contributed to the youth un- of the period, which led to question- of the war and the draft.

en. Hershey believed that the draft ld be a vehicle with which to instill ues, including a sense of obligation, in neration of misguided youth. He rec- ized that changes in exemption and rment policies that he had made in years between the Korean and Viet- wars contributed to charges that the t was inequitable.

ather than support reforms to make draft more acceptable to a new gen- ion, he defended the status quo on grounds that the system inculcated e values he was trying to preserve. essor Flynn implies, too, that Gen. shey would not, or could not, do y with his decentralized local boards use, for him at least, the Selective vice System itself had become one of e cherished small towns of his value em.

ewis Hershey came to value the Se- ve Service System in itself, and he saw himself as indispensable. However, conscription never became institutional- ized in the United States. From the earli- est days of the colonial period, Ameri- cans considered compulsory military ser- vice as a defense means of last resort.

All the colonies enacted laws implying universal military obligation and estab- lished bases for emergency compulsory service; none enforced their laws rigor- ously in peacetime and all tried volunteer- ism before resorting to conscription in emergencies. Compulsory military ser- vice, even in war, conflicted with indi- vidual freedom of choice and the right to an absence of government intrusion.

George Flynn's excellent and highly readable biography of Lewis Hershey evokes sympathy for the man who tried to make compulsory military service a virtue in a society that resented it. Gen. Hershey was devoted to his country, and he hardly profited from his years of ser- vice. His failure was in his understanding of American history and his attempt to perpetuate a system of compulsory mili- tary service that was out of step with so- ciety.

LT. COL. ROBERT K. GRIFFITH JR. is currently assigned to the U.S. Army Center of Military History and is pre- paring a study of the Army's transition from the draft to the All Volunteer Force.



"FIRE!"

Varied Fare

The Origins of War: From the Stone Age to Alexander the Great. *Arther Ferrill. Thames and Hudson, 500 Fifth Ave., New York, N.Y. 10110. 240 pages; notes; bibliography; illustrations; maps; battle plans; index; $19.95.*

This interesting and useful small volume traces the development of warfare from pre- historic times to the fourth century B.C. It in- cludes detailed, well-illustrated accounts of all major land and sea battles, an analysis of weapons from the sling to the catapult and a stimulating discussion of ancient strategy and tactics. Professor Ferrill compares the Near Eastern combination of cavalry, skirmishers and light infantry with the Greek reliance on heavy infantry. He concludes that when the two styles of warfare were integrated in the Macedonian army of Philip and Alexander, the resulting form of combat continued, de- spite technological changes, all the way down to Napoleon.

What Every Veteran Should Know, 1985. *Pat- rick L. Murphy. Veterans Information Ser- vice, P.O. Box 111, East Moline, Ill. 61244. 400 pages; charts; index; $6.*

The 48th revised edition of this service offi- cers' guide covers the veterans' benefits, ser- vices, rights and privileges under Veterans Ad- ministration jurisdiction. "This reference book will enable veterans, service officers and oth- ers interested in veterans' benefits to familiar- ize themselves with the scope of federal bene- fits, services, entitlements and the best ways to help the veteran and his dependents to ob- tain benefits rightly due."

October 1973: The Arab-Israeli War. *Frank Aker. Archib Books, P.O. Box 4327, 995 Sherman Ave., Hamden, Conn. 06514. 185 pages; notes; bibliography; maps; illustra- tions; index; $19.50.*

A brief but lucid description and analysis of the Yom Kippur War, this account is well- written, balanced and enhanced by new infor- mation and interpretations. An introduction by Maj. Gen. George S. Patton, U.S. Army, retired, underlines the lessons of the war and emphasizes the need to study it as a proxy conflict between the United States and the So- viet Union.

Deliverance at Los Baños. *Anthony Arthur. St. Martin's Press, 175 Fifth Ave., New York, N.Y. 10010. 287 pages; notes; bibli- ography; illustrations; index; $16.95.*

The dramatic rescue of more than 2,000 American civilians held prisoner by the Japan- ese during World War II near the Philippine town of Los Baños is the climax of this fasci- nating account of courage and endurance un- der extreme circumstances. Most of the book is devoted to the story of how these men, women, and children—businessmen, doctors, priests, nurses, wives, prostitutes and others —managed to survive a three-year captivity marked by hunger, disease and brutal mis- treatment. It is based largely on diaries, mem- oirs and interviews with survivors.

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AUSA in Action

ormer Chapter President Gets Spirit of Ft. Benning' Award

former Chattahoochee Valley–Ft. Ben- Chapter president recently received the "Spirit of Ft. Benning" Award, in a cere- y held at the Ft. Benning Officer's Club. aynard R. Ashworth Sr., president *emer-* of the *Ledger–Enquirer* newspapers, was ored for his lifelong service to the Army Ft. Benning.

ost Commander Maj. Gen. John W. Foss blished the new award to honor a citizen olumbus or Phenix City whose personal mitment to the infantry soldier and Ft. ning set him apart from others in the tri- munity.

r. Ashworth was born 2 July, 1894, in len, Mo., and became publisher of the *ger–Enquirer* in 1936. He was president publisher from 1937 to 1942, when his spaper career was interrupted by his en- to the Army, where he served until 1944.

It was during this time that Mr. Ashworth, in a dual role as staff officer at Ft. Benning and publisher of the Columbus papers, start- ed the *Bayonet* in 1942. He returned to the *Ledger–Enquirer* as publisher after his Army service and was elected president of the R. W. Page Corp. in 1961.

Mr. Ashworth is a member of the Southern Newspaper Publishers Association, the Amer- ican Newspaper Publishers Association, the Georgia Press Association and the Columbus Rotary Club; past president, past district governor and present member of the Military Order of World Wars; and a member of the Chattahoochee Valley–Ft. Benning Chapter of AUSA. He served as president of the chapter in 1958 when it was known as the Columbus–Phenix City–Ft. Benning Chapter. He also served one term on the Association's Advisory Board of Directors.



Chattahoochee Valley–Ft. Benning Chapter. *Ft. Benning Commander Maj. Gen. John W. Foss* (left) *pre- sents the first "Spirit of Ft. Benning" award to Maynard R. Ashworth Sr., president* emeritus *of the Columbus, Ga.,* Ledger–Enquirer *newspapers and former chapter president.*

rge Turnout at AUSA Golf Tournament

litary and civilian members of the Cen- Texas–Ft. Hood Chapter teed off at the nd annual AUSA Golf Tournament this g at nearby Anderson Golf Course.

he turnout for this year's tournament almost twice as large as it was for last 's," said Mike Frye, one of the tourna- t organizers. "Last year 57 members cipated and this year 108 members and sts turned out."

his tournament had a two-fold purpose," Frye continued, "to raise money to help to send soldiers to Washington, D.C., he annual AUSA meeting in October also to provide an opportunity for mili- and civilian members to talk about is- and requirements in a social environ- t."

hile the atmosphere at Anderson Golf se was friendly, the golfers were com- g for prizes. The top three teams were ded trophies and a consolation prize awarded to the last-place team. Taking place in this year's tournament was the of Joe Grady, Chris Charles, John Main Wesley Taylor.



Central Texas–Ft. Hood Chapter. *David Fernandez tries his putter at the An- derson Golf Course during the annual AUSA golf tourna- ment held to raise funds to send sol- diers to the annual AUSA meeting in Washington, D.C.*

Army Secretary Speaks at Ft. Bragg

Secretary of the Army John O. Marsh Jr. visited Ft. Bragg, N.C., to speak during the quarterly meeting of AUSA's Braxton Bragg Chapter.

Mr. Marsh, a former airborne soldier at Ft. Bragg, spoke to a large crowd of members and guests at the Ft. Bragg Officers' Club. His speech dealt with the need for deterrence and peace between the two major world powers.

Secretary Marsh also discussed such subjects as chemical warfare, weapons acquisition and the Army retirement system at a brief press conference.

Regarding the retirement system, he said, "The retirement program we have in the military is a benefit. It is an attraction that enhances the all-volunteer force. There are some statistics that indicate to us that, once you begin to make significant changes in the force, you are going to cause an exodus of career NCOs and younger officers."

Bobby G. Suggs, president of the local AUSA chapter, announced that Secretary Marsh has become an honorary member of the organization and presented him with a plaque.

PVT. MICHAEL HOFBAUER



Braxton Bragg Chapter. *Chapter President Bobby G. Suggs* (left) *presents an AUSA/XVIII Airborne Corps plaque to Secretary of the Army John O. Marsh Jr., who spoke on deterrence at a chapter meeting.*

Around





Mediterranean Chapter. *Howard Ber*
er (left), *chapter vice-president, prouc*
displays his chapter's 1st Place Cert
cate for Corporate Membership, whi
was presented by Maj. Gen. Robert
Cocklin, AUS, Ret. (right), *AUSA's e*
ecutive vice-president, at the Associ
tion's European Department Annu
Meeting in Garmisch, West Germar
Maj. Gen. Archie S. Cannon Jr., U.
Army Europe's deputy chief of staff
personnel and president of AUSA's E
ropean Department, was also on ha
for the presentatic

★ STAR CHAPTERS ★

Chapters that reach their aggregate membership targets are classified as Star Chapters and will retain that status until they fail to reach any subsequent membership goal. The following chapters have achieved Star Chapter status. Chapters annotated with an asterisk have attained their semiannual goal based on the 30 June, 1985, membership targets and the end-May 1985 membership statistics. Those chapters without asterisks achieved their Star Status based on the 31 December, 1984, membership goals.

* AFCENT Community (Brunssum, The Netherlands)
* Alaska (Anchorage)
* Ark–O–Tex (Texarkana, Tex.)
* Bavarian Alpine (Munich, Ger.)
Blue Mountain (Harrisburg, Pa.)
* Bogardus S. Cairns (Ft. Rucker, Ala.)
* Braxton Bragg (Ft. Bragg, N.C.)
Captain Shreve (Shreveport, La.)
Central Texas–Ft. Hood (Killeen)
* Chattahoochee Valley–Ft. Benning (Columbus, Ga.)
Cincinnati (Ohio)
* Coastal Empire (Ft. Stewart, Ga.)
Connecticut (Norwalk)
Denver Centennial (Colo.)
Des Moines Freedom (Iowa)
Dix (Ft. Dix, N.J.)
Douglas MacArthur (Norfolk, Va.)
Fairfax–Lee (Ft. Belvoir, Va.)
Florida Gulf Stream (Miami)
* Ft. Armstrong (Rock Island, Ill.)
Ft. Jackson–Palmetto State (Columbia, S.C.)
* Ft. Monmouth (N.J.)
Fort Pitt (Pittsburgh, Pa.)
Fort Worth (Tex.)
Gallant Pelham (Ft. McClellan, Ala.)
GA Omar N. Bradley (Ft. Bliss, Tex.)
* Gen. Creighton W. Abrams (Frankfurt, Ger.)
* Gen. Joseph W. Stilwell (Ft. Ord, Calif.)
Gen. W. C. Westmoreland (Reno, Nev.)
George Washington (Washington, D.C.)
* Greater Augusta–Ft. Gordon (Ga.)
* Greater Gulf Coast (Mobile, Ala.)
Greater Los Angeles (Calif.)
Hawaii (Honolulu)
Henry Leavenworth (Ft. Leavenworth, Kan.)
Indiana (Ft. Benjamin Harrison)
* Korea (Seoul)
Leonidas Polk (Ft. Polk, La.)
Long Island (N.Y.)
Magnolia (Jackson, Miss.)
Maine (Saco)
MG William F. Dean (Oakland, Calif.)
* MG Henry G. Sharpe (Lathrop, Calif.)
* Marne–Franconia (Würzburg, Ger.)
Massachusetts Bay (Boston)
Mid-America (Wichita, Kan.)
* Mid-Palatinate (Kaiserslautern, Ger.)
* Middle Forge (Dover, N.J.)
Mother Lode (Sacramento, Calif.)
New Orleans (La.)
New River Valley (Radford, Va.)
Norddeutschland (Bremerhaven, Ger.)
* Old Ironsides (Ansbach, Ger.)
Pikes Peak (Ft. Carson, Colo.)
* Polar Bear (Fairbanks, Alaska)
* Puerto Rico (Ft. Buchanan)
* Redstone–Huntsville (Ala.)
Robert E. Lee (Ft. Lee, Va.)
San Bernardino–High Desert (Barstow, Calif.)
* San Diego (Calif.)
San Jacinto (Houston, Tex.)
Southeastern Oklahoma (McAlester)
* Southern Arizona (Ft. Huachuca)
* Southern New Mexico (Las Cruces)
* Southwest Oklahoma (Ft. Sill)
* Spearhead (Frankfurt, Ger.)
Sunshine (Orlando, Fla.)
Tacoma–Ft. Lewis–Olympia (Wash.)
Texas Capital Area (Austin)
West Point Area (N.Y.)
Wright Brothers (Dayton, Ohio)
* Yorktown (Zweibrücken, Ger.)

ɔters



GA Omar N. Bradley Chapter. *Standing before a DIVAD (division air-defense gun), AUSA's Director of Regional Activities, Col. Ralph E. Ropp, USA, Ret.* (far right), *presents a host chapter streamer to F. Randolph Young, chapter president, and Ft. Bliss Commander Maj. Gen. James P. Maloney, who hosted AUSA's Fourth Region Meeting. Harold Schnorrenberg is holding the chapter's flag.*



VPI Company. *Virginia Polytechnic Institute and State University Company members and guests attend a dining-in held to honor the Army's 210 years of service to the nation.*

Welcome Center Gets Television

Corporate Member's Gift Benefits Troops

Soldiers who are in- or out-processing at the Ft. Stewart–Hunter Army Airfield Welcome Center do not have to sit idly while waiting between processing stations.

Thanks to the efforts of AUSA's Coastal Empire Chapter and one of its corporate members, the Welcome Center lounge now has a new color television set, donated by Hinesville Military TV & Stereo.

Ovid Danielson, the store manager, made the presentation to M.Sgt. Thomas Kunkle, noncommissioned officer in charge of the Welcome Center.

M.Sgt. Kunkle observed, "This will be of great benefit. While they are waiting their turn at appropriate processing stations, soldiers and family members have a place to sit and rest. While sitting, they will have this new television to watch."

GENE SEXTON



Coastal Empire Chapter. *Ovid Danielson* (left), *store manager of Military TV & Stereo, presents a certificate of ownership to M.Sgt. Thomas Kunkle, NCOIC of the Ft. Stewart–Hunter Army Air Field Welcome Center. The AUSA corporate member donated the color television set in the background to the Welcome Center.*



Chapter Notes

New York–Col. Joseph Markle Chapter. Mrs. Douglas MacArthur was the recipient of the chapter's annual Distinguished Service Award, which was presented to her at a banquet held at the St. Regis Hotel.

At another chapter meeting, members heard from Maj. Gen. Indar Jit Rikhye, former Indian army leader, who spoke on military events in Southwest Asia.

Cincinnati Chapter. The treatment of Vietnam veterans was the subject of a talk given by Earl Correll, past president of the Cincinnati Chapter of Vietnam Veterans.

Buckeye Chapter. "Missiles—Defensive and Offensive" was discussed by Capt. C. S. Menschner, USAF, assistant professor of military science, University of Akron. He spoke at a dinner which was co-sponsored by the Reserve Officers Association.

Southwest Oklahoma Chapter. More than 100 members and guests participated in a chapter golf tournament held at the Ft. Sill Golf Club.

Dwight D. Eisenhower Chapter. Brig. Gen Ronald K. Andreson discussed the Army's light helicopter experimental program at a dinner held at the Palm Springs Hilton–Riviera Hotel.

Wolverine Chapter. The commander of the Fourth U.S. Army, Lt. Gen. Edward C. Peter II, discussed the mission of his command while addressing a chapter dinner meeting.

ASSOCIATION OF THE U.S. ARMY

AIMS AND OBJECTIVES

THE ASSOCIATION OF THE U.S. ARMY shall be an organization wherein all who are in accord with its objectives may join in the exchanging of ideas and information on military matters, and in fostering, supporting and advocating the legitimate and proper role of the Army of the United States and all of its branches and components in providing for and assuring the nation's military security.

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Arkansas Chapter. "National Defense" was the subject of an address given at a chapter membership dinner by the director of the Army staff, Lt. Gen. Arthur E. Brown Jr.

Indiana Chapter. Lt. Gen. Max W. Noah, the comptroller of the Army, discussed the 1986 defense budget at the chapter's annual banquet held at the "500" ballroom of the Indianapolis Convention Center.

Maj. Gen. Henry G. Sharpe Chapter. The adjutant general of California, Maj. Gen. Willard A. Shank, talked about the California Guard's improved readiness while addressing a chapter general membership dinner meeting.

Fort Worth Chapter. Jeane J. Kirkpatrick, former ambassador to the United Nations, was the principal speaker at a chapter dinner. Ambassador Kirkpatrick spoke about U.S. interests in Latin America.

Columbia River Chapter. Col. Robert Friedenuald, Portland District Engineers, spoke about "Mount St. Helens—Then and Now" while addressing a chapter dinner meeting held at the Thunderbird Inn.

Fairfax–Lee Chapter. The commander of Vint Hills Farms, Col. Leland Holland, the military attaché at the American Embassy in Iran when that embassy was taken by Iranian terrorists, was the guest speaker at the chapter dinner meeting. He discussed the Iranian hostage situation.

St. Louis Gateway Chapter. Gen. Robert W. Sennewald, commander, U.S. Army Forces Command, was the principal speaker at the chapter's annual leadership awards banquet, where scholarships were presented to deserving area high school students and awards were presented to distinguished soldiers.

Goyette–Tucson Chapter. Maj. Gen. Hoyt S. Vandenberg Jr., USAF, Ret., presented a film which examined the air war over Vietnam at a chapter dinner meeting.

AUSA–ROTC Company Notes

Lewis M. Perlstein Company (Fitchburg State College). Maj. Frank Markham, professor of military science, spoke at a company meeting and discussed "Army Experiences."

Northwestern State University Company. Col. Frederick Bosarge spoke about the ROTC Program and branch selections at a company meeting.

VPI Company (Virginia Polytechnic Institute and State University). The company held a dining-in to celebrate the Army's 210th birthday. The featured speaker was Lt. Gen. Robert L. Moore from the Army Materiel Command.

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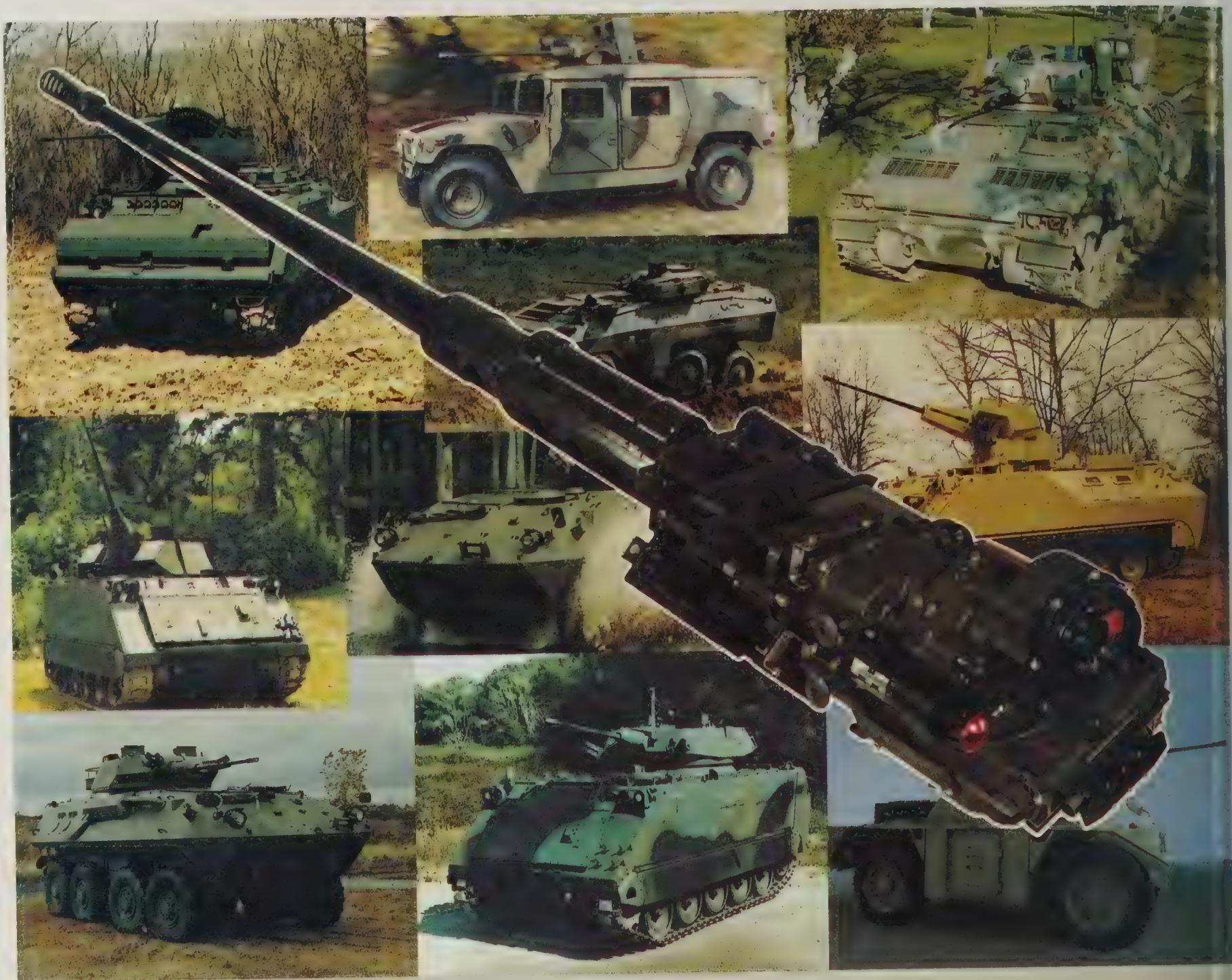


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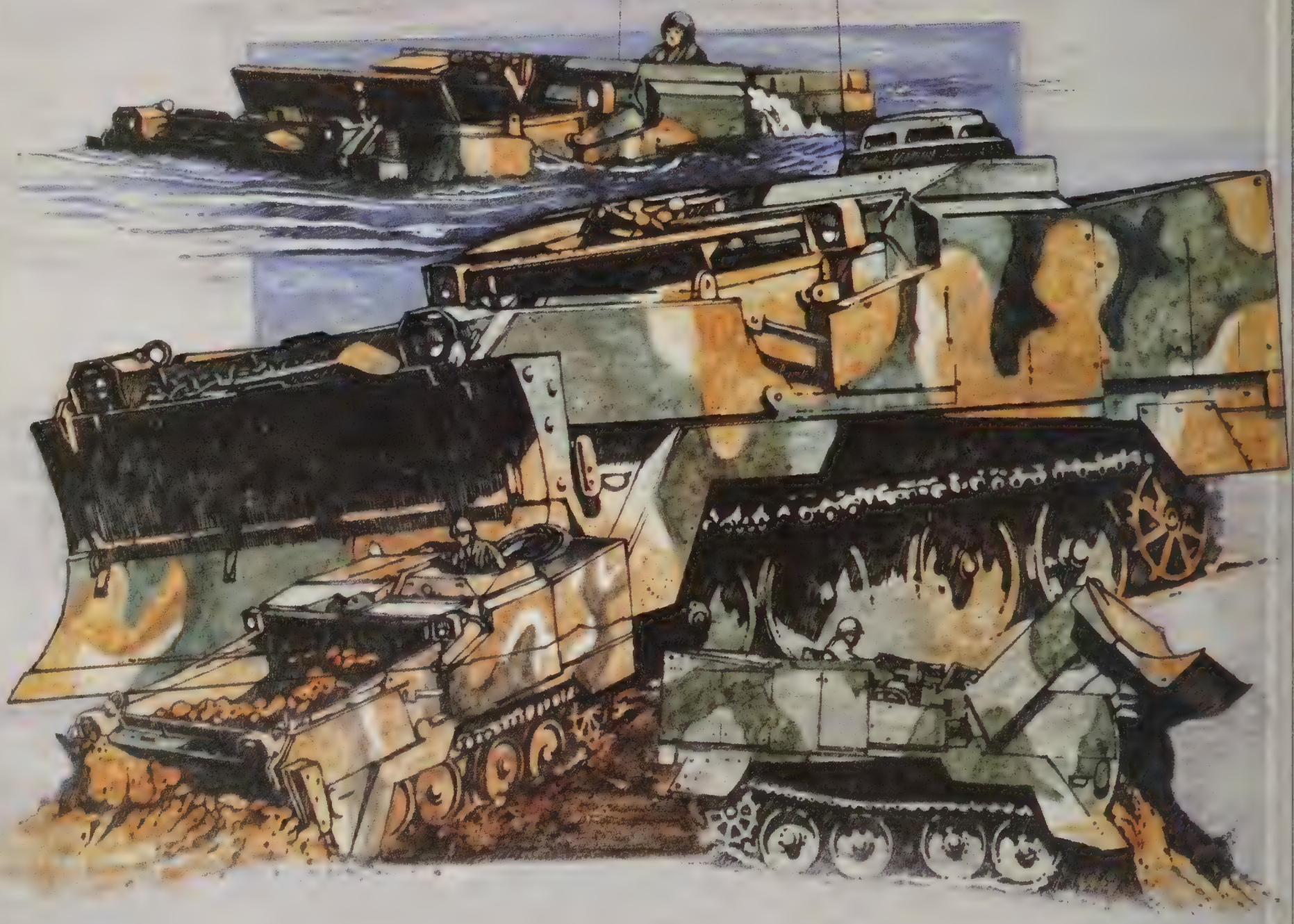
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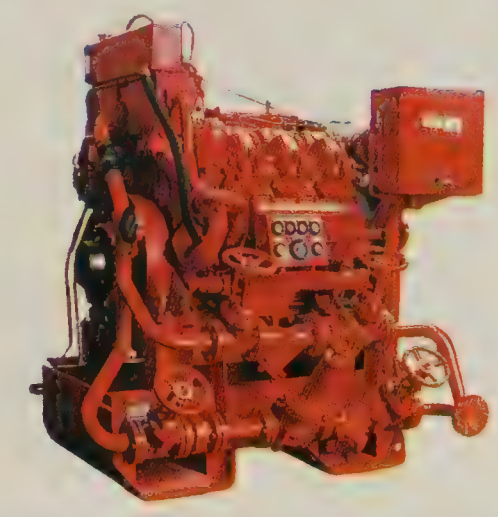
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The Magazine of Landpower

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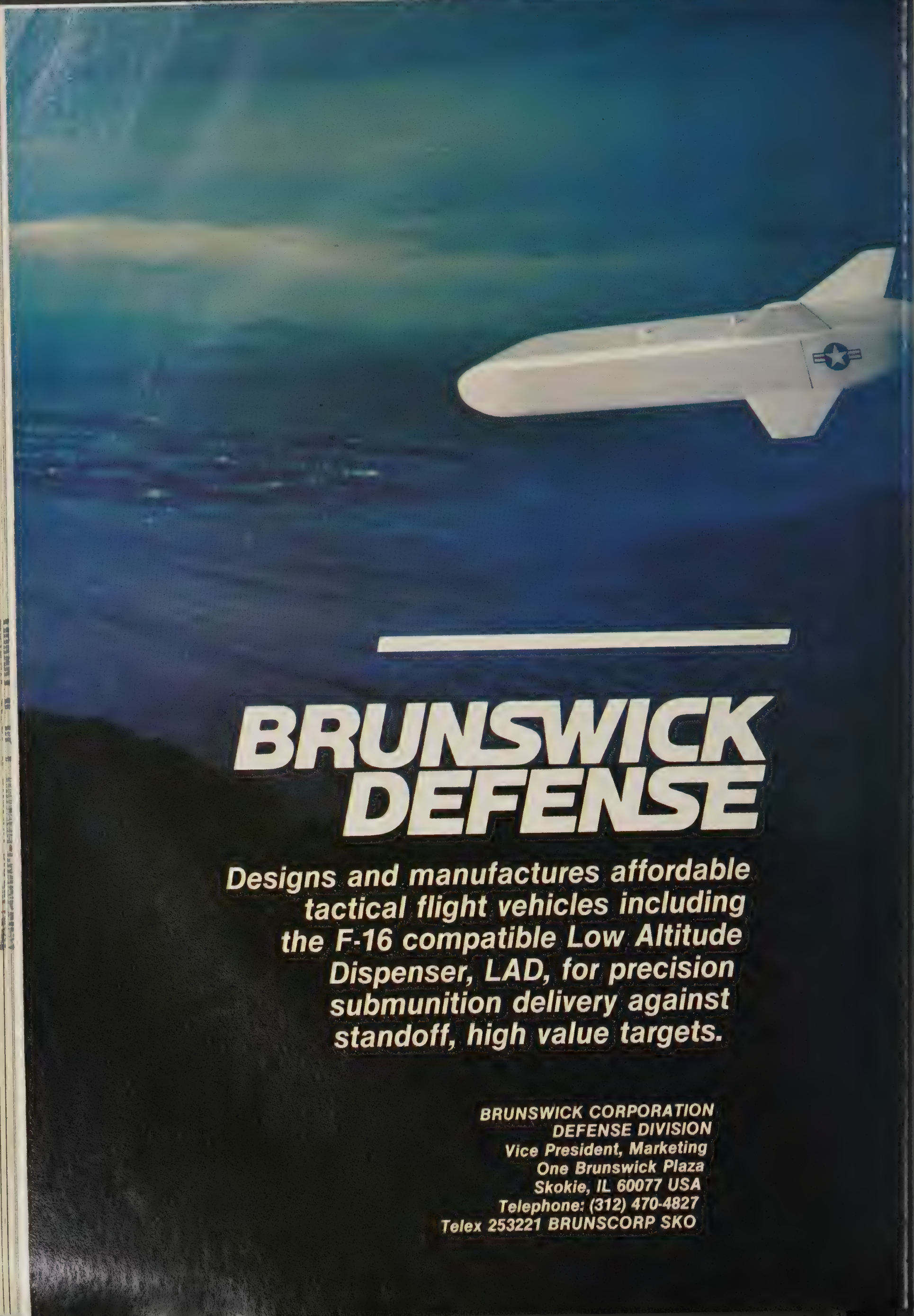
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Only through courage, determination and a singular display of tactical ability were U.S. and South Korean forces able to hold the line on a narrow strip of land in front of the port city of Pusan during the early months of the Korean War. **By John Hoyt Williams**

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The Reserve Components: Are They Ready or Not?

■ I found it interesting that your June sue contained two excellent articles per- ining to the reserve components. Col. mes W. Shugart III's article "Needed: A 'orkable Definition of 'One Army' " ad- essed many problems that constantly ce the reserve components commander id staff—problems the reserve compo- nts are well aware of. I would disagree, owever, that "both sides delude them-

Letters

lves about the capability of the reserve perform satisfactorily in a sustained ilitary mission." Having been a reserve mmander at many levels and involved ith the Reserve forces for many years, is my view that both active and reserve lanners look more realistically at mis- on orientation and sustainment today an at any time in recent years.

As for an absence of team training re- ected in staff coordination above the mpany, troop or battery level, believe e that training is there! Senior com- anders and their staffs are functioning a positive and direct manner for the mple reason that they take the extra me—extra days and extra weekends—way from their civilian pursuits and mily to produce well-trained command- s and integrated staffs.

Finally, Col. Shugart should have ad- ressed the significant impact of the readi- ess groups at all levels of training and dministration, as pointed out so well by ol. Jamo C. Powell in his article "Readi- ess Groups: What Are They?" As a for- er commander of a Reserve cavalry rigade, I can attest to the value of the adiness groups. Readiness Group Ft. iley personnel were much like members f my own command, for we worked so osely together. Certainly this is another ositive impact on Reserve forces mis- on readiness.

Both Col. Shugart and Col. Powell ex- ressed themselves in a positive manner out our Reserve forces—which I expect because they have had the opportunity f working with and knowing the people ho constitute the reserve components.

BRIG. GEN. PHILLIP J. ZELLER JR.
U.S. Army Reserve, retired
nction City, Kan.

■ In the article "Needed: A Workable efinition of 'One Army' " ("Front & enter," June), Col. James W. Shugart III ises an issue that needs to be addressed quarely. Namely, what precisely is the le of the reserve components to be in



the Army of the 1980s and 1990s?

Speaking as a long-time reservist, the attention and resources directed toward the reserve components in recent years have been most welcome, and they have led directly to noticeable improvements in training and morale. Unfortunately—as the author points out—one by-product of these improvements has been a tendency for eager reservists to believe that they are not only as good as the active component, but also as ready for war. Clearly, given the part-time nature of the job, no reserve component combat unit is as ready as a comparable active component unit which trains five days a week.

While many reserve components units are good, they are good by standards for reserve forces. To become deployable assets, they will unquestionably require a period of time to train to active components standards in terms of fitness and collective teamwork. Col. Shugart's caveat to the effect that reserve units must clearly be identified as members of the special team is one that force planners must not lose sight of.

One interesting question that the author addresses in passing is that of why the Army has become increasingly—and perhaps overly—dependent on Reserve forces. The decision to field two new divisions, while constrained by an active component force ceiling of 781,000, has compelled force managers to rely on them to the extent that one brigade in each division is to come from the reserve components. Assuming that we really do need both of these divisions, does it really make sense to hamstring them by reducing their deployability to the level of units that—no matter how good they are as reserve units—will inevitably require time to train up to active component standards if they are mobilized?

I submit that, if in fact the threat to national security is so great that we simply must have two more divisions, then it is time to go to Congress and make a case for increasing the Army's authorized strength.

In the meantime, let us undertake a thorough analysis of the role, the capabilities and the limitations of the reserve components before committing ourselves to an overdependence on a force ill-prepared for immediate use.

MAJ. EDGAR H. RAWL III
U.S. Army Reserve
Richmond, Va.

■ The articles in the June issue dealing with reserve components and readiness groups were excellent teaching texts on a subject area frequently misunderstood by the vast majority of the active Army.

Col. James W. Shugart III's article, "Needed: A Workable Definition of 'One Army' " ("Front & Center," June), highlights the efforts made by reserve components leadership to make the system work and accomplish assigned missions. Unfortunately, he fails to give full credit to the reserve components commander, who spends far more than his drill and annual training periods to ensure that his command responsibilities are met—in essence he has two full-time jobs, a civilian career and a unit command.

Often his command responsibilities demand more time and personal financial commitment than he is compensated for by the military. Many reserve components commanders travel great distances at their own expense to perform as unit commanders. The dedication found in these reserve components leaders certainly meets the standards of the active Army.

Col. Jamo C. Powell's article, "Readiness Groups: What Are They?", was excellent. Unfortunately, most of the Army, including those who sit on selection boards for schooling, promotion and command, fail to recognize the superb quality of the junior officers assigned to readiness groups and the demanding duties they perform.

Fortunately, the superb quality NCOs are recognized by promotion and schooling selection even though their officer team counterparts are not.

One correction to Col. Powell's article should be made. The readiness group established at Shilling Manor, Salina, Kan., moved to Ft. Riley in August 1977. A tremendous amount of time and effort has been expended to correct the official rec-

ords on the location of Readiness Group Ft. Riley, but it still appears that the word is not out to all.

I salute ARMY for coverage of the Total Army with such fine articles.

COL. JOHN A. SEITZ III

Ft. Sheridan, Ill.

Soviet Nuclear Policy

■ I have some comments on May's "Front & Center" article, "Red Army's Operational Concept Is Changing." Speaking to the issue of Soviet nuclear policy, an insider, Victor Suvorov, in his book *Inside the Soviet Army*, has written:

> The theory that a nuclear war would take a long time to build up originated in the West at the beginning of the nuclear age. It is incomprehensible and absurd, and it completely mystifies Soviet marshals. For a long time there was a secret debate at the highest levels of the Soviet government—have the Western politicians and generals gone off their heads or are they bluffing? It was concluded that, of course, no one really believed in the theory but that it had been thought up in order to hide what Western policy makers really believed about the subject. But then the question arose: for whose benefit could such an unconvincing and, to put it mildly, such a silly idea have been dreamed up? Presumably not for the Soviet leadership. The theory is too naive for specialists to believe. That must mean that it was devised for the ignorant and for the popular masses in the West, to reassure the man in the street.

ARMY invites letters to the editor. The subject matter may be about material that has appeared in the magazine or about any topic which the writer feels would be of interest to ARMY readers. The editors reserve the right to edit letters for reasons of style, accuracy or because of space limitation. All the letters must be signed, and while we prefer to carry the writers' names we will consider requests for withholding them if there is a compelling reason to do so.

The Editors

In relation to this, a few other points must be mentioned, in light of the rest of the report:

■ It may be dangerous to ascribe attributes to Soviet planners based upon our own doctrine. They have never made war the way we have and they never intend to.

■ Nothing we do in the way of deterrence is going to ruffle a single hair in the Kremlin, no matter what song and dance they conjure up for public consumption in the West. All we do is cause them to change their options and modify their timetables. And they constantly and subtly modify our public opinion, attempting to unblock their moves.

■ They are devious and not necessarily asinine nuclear tacticians, knowing the consequences of ground bursts.

■ Suvorov's marshals are probably still chuckling at our comparison of their Mi-28 to our AH-64A Apache. It's comparing apples to oranges. This is the military equivalent of the "pathetic fallacy."

■ Finally, bear in mind (pardon the pun) that very little gets leaked out of the Soviet Union unless *they* leak it. Disinformation and camouflage are Russian specialties far older than the Potemkin Village. (Look how long it took us to realize that the vehicles they used *weren't* the same things they sold to the Arabs or shipped to the Cubans.)

JAMES A. F. COMPTON

La Mesa, Calif.

Dealing With the Media

■ I found the article by Col. Harold J. Meyer, U.S. Army, retired, "Holding the Media Accountable" ("Front & Center," May), to be thought provoking. He raises some issues which should be debated. Someone needs to take issue with some of his "solutions" lest today's "action Army" believe his views should prevail.

Having served as a press escort and combat correspondent in South Vietnam (1968–1969), as a public affairs officer at Headquarters, U.S. Marine Corps, as an action officer planning for the returns of Iranian hostage Sgt. Krauw and prisoner of war Pfc. Bobby Garwood, and as the Marine Corps spokesman in Beirut, Leb anon, during August through Novembe 1983, I feel I might have something t contribute to this dialogue.

I have found that an honest, candid open approach with the media served m well. I was fortunate to serve under lead ers who supported this approach. Tha does not mean that we ran to the pres with every negative thing that occurred It does mean that we never lied or with held "bad" news. Solid guidelines exist a to what information should be release and how it should be released. I know o no instance where a PAO or his com mander ever suffered when the guidelin were followed.

One point overlooked by Col. Mey is the public's right to know. As we a surrogates who serve the public's defens the media serves the public access to i formation which it uses to accept or mo ify the way we serve. Col. Meyer is co rect in his assertion that the media has responsibility to provide accurate info mation. He is wrong when he condon withholding negative information whi has nothing to do with national securit

Insisting on lie detector tests for a creditation is as abhorrent as changi our judicial precedent, which assum that one is innocent until proven guil Offering an orientation course, similar that offered to Marine Corps comb correspondents prior to serving in Vi nam, has merit.

And what of censorship?

Col. Meyer stated the problem w Modern communications and transpor tion technology make even the most mote battlefields accessible. Other g ernments, unencumbered by our sense fair play and ethics, provide control access and distorted propaganda. Th who point to Grenada as a model of r dia relations on the battlefield fail to preciate the fact that the Western wo was denied access to factual informat for three days. The only news sou was from Cuba, which laced believa stories with threads of disinformati Had the battle lasted longer, what co have countered those clever distortion government press releases?

We need the media to tell our st And the media needs honest military sonnel to provide them with facts an educate them when they go astray of truth. When there is a disparity, it is public's right to decide where the t exists.

I doubt that there is any need for r tary censorship under most circumstar We have a duty and obligation to en the security of information which is c cal to national defense. We have a lutely no business distorting the trut hiding information which merely em rasses us or illuminates wrong doin

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have found most of the media to be d-working, conscientious individuals o are committed to the "truth." That cept is not the same for everyone, is determined by one's perspective. re often than not, "truth" suffers from k of information, rather than too much rmation. And the few reporters I have to admonish are not worth mention-. Only one or two ever violated guide-s to the degree that they were de-ed *persona non grata*. Those few were lt with appropriately by their own vs organizations.

es, we need to review how we will rk *with* the media on battlefields of future. But the thrust must be directed ard telling the "truth" and on coun-ng disinformation.

MAJ. BOB JORDAN
U.S. Marine Corps, retired
Associate Editor, *Leatherneck*
antico, Va.

ordplay

I find myself compelled to respond the article, "When to 'Fall on One's ord' " ("Front & Center," April).

here are many occasions during the rse of normal business when conflicts e because of micro-management at-pts from higher headquarters affect-the unit mission or performance. As esponsible junior officer, I have on eral occasions taken stands directed at staff and on at least one occasion at commander himself. I felt obligated stand firm on a particular issue, real-g—perhaps not totally at that moment hat I was gambling with my future. lowever, in hindsight I feel I must tinue to roll the dice on issues which ybe are not all that important because he principle involved. When someone vrong, he is wrong. Rank is no reason submit to erroneous or bogus infor-tion or guidance. The boss can be ng. If you knuckle under, then per-s you are in the wrong profession. perhaps I am!

CAPT. ENRIQUE CARO
O San Francisco 96301-0047

■ I am writing to clarify the etiology of the phrase, "falling on one's sword," which Lt. Col. David W. Owen discusses in his article, "When to 'Fall on One's Sword' " ("Front & Center," April).

Col. Owen states that "the general belief was that the expression itself had its etiology in the tradition among Japanese samurai of literally falling on their swords rather than betraying their code of ethics."

I cannot attest to the accuracy of this statement, but I can cite the Bible as the source of this phrase and practice. King Saul was the first king of ancient Israel. Modern scholars date his death to approximately 1000 B.C.

The last chapter of the First Book of Samuel describes the death of Saul in battle:

> The fighting grew heavy about Saul; the bowmen took him off his guard, so that he fell wounded by the bowmen. Then Saul said to his armor-bearer, 'Draw your sword and run me through with it; I do not want these uncircumcised men to come and gloat over me.' But his armor-bearer was afraid and would not do it. So Saul took his own sword and fell on it. His armor-bearer, seeing that Saul was dead, fell on his sword too and died with him.

Treatment of prisoners of war in the ancient world included torture, enslavement, being held up for ridicule and ignominious death. There was no Geneva Convention governing humane treatment of prisoners. Having been wounded, Saul ultimately falls on his sword in order to foreclose Philistine exploitation of a royal prisoner.

Falling on one's sword is considered a noble act when employed by noble soldiers. In practical terms, when death is imminent, what yet remains of life can be used to deny total victory to the enemy.

In terms of metaphor, this phrase can be employed to describe any act of honor performed at great personal sacrifice for the purpose of maintaining a principle or doing that which is right.

This latter definition is consonant with Col. Owen's interesting article, which raises the question of whether taking a stand on an issue when properly motivated and maintaining it regardless of risk to life, limb or career is practiced in our military today.

CHAPLAIN (COL.) ALVIN I. LIEBERMAN
U.S. Army, retired
Boston, Mass.

■ I believe the expression "fall on one's sword" is *not* of Japanese origin. If I remember correctly, King Saul at the battle of Gilboa was the first recorded casualty, "because all was lost and so as not to fall into enemy hands alive." The Japanese do not fall on their swords—usually—they disembowel themselves.

E. SHMITZEN
Haifa, Israel



"Hello, FDC? A tad to the right, add a hair and fire for effect."

Cartridge Case Clarified

■ In the April "News Call," a brief article appeared entitled "Cheaper Cartridge Cases?" I would like to offer a few comments clarifying the information given. The award to the Brunswick/SNPE team was only one of three awards made regarding the spiral wrapping of 155-mm combustible cartridge cases. These awards were also made to Hercules Corp. and Armtec Defense Products Inc.

Over five years ago, the Army Armament Research and Development Center at Picatinny Arsenal, N.J., ran a program comparing spiral wrap cases to felted fiber cases, and, in fact, our company produced a quantity of spiral wrap cases for these programs. It might be of interest to your readers to know that the 155-mm M203E2 combustible cartridge case made by the felted fiber method was type classified on 29 March to the M203A1 and will soon be in production.

With regard to the comment, ". . . the most economical way known to produce combustible cartridge shells," there are mixed opinions within the community on this statement. Spiral wrapping technology limits one to right cylinder shapes. Further, a bottom has to be fabricated and then attached to the right cylinder. Obviously, additional costs are incurred because of additional operations.

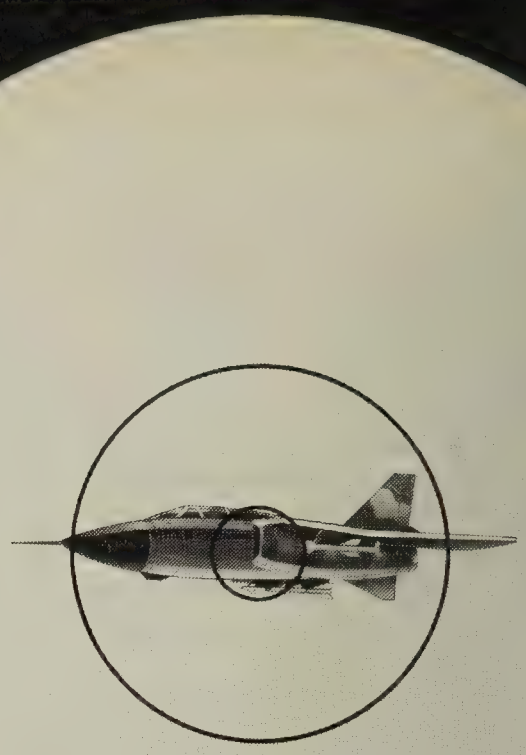
Further, an economical process for making the nitrocellulose paper for use in spiral wrapping has not been available in the United States. Efforts are under way to accomplish this, but to date they have not been entirely successful.

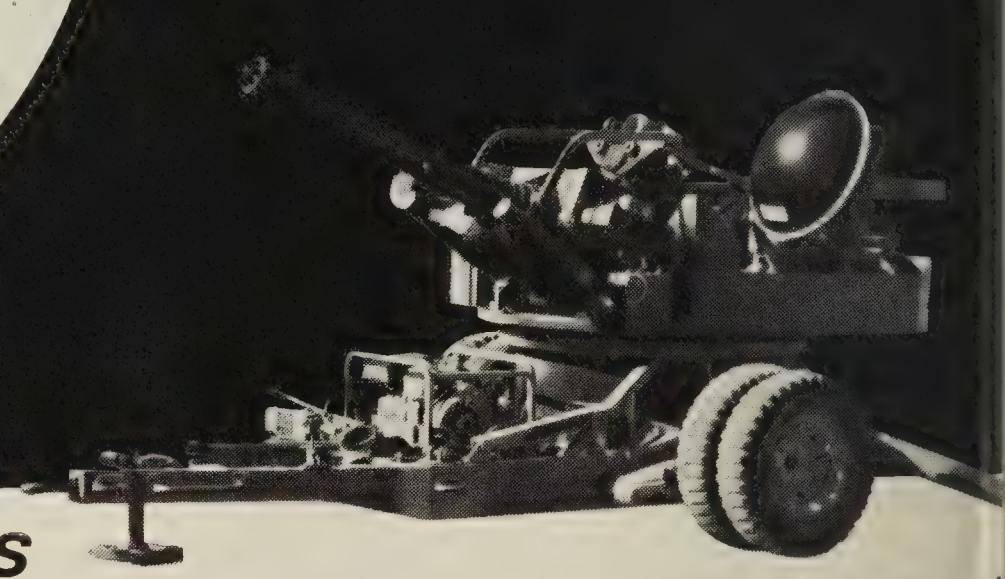
Regarding the mention of mixed success with tank ammunition, as you know, four rounds for the new 120-mm tank gun have recently been type classified for use in the Abrams M1A1. This is part of the technology transfer program from the Federal Republic of Germany to the United States, and uses a combustible cartridge case made by the felted fiber

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process. To date, it is estimated that over a million rounds have been produced in Europe, while at Armtec we are engaged in the first production buy of 45,000 cases after having completed production of some 20,000 cases during the technology transfer program. Some years ago, over two million combustible cases were produced for 152-mm tank ammunition.

I would agree that there are cheaper cartridge cases available, but spiral wrap at the moment is unproved, while those made by the felted fiber process have been type classified and are currently either in the field or will soon be. They not only have proved to be economical, but in the case of the 155-mm M203A1, have increased tube life by 50 percent—a significant economical consideration.

HOWARD C. APPLEMAN
President,
Armtec Defense Products Inc.
Coachella, Calif.

Styles of Warfare

■ In his letter, "Doctrine Reconsidered" (March), Wallace J. Katz was unfair to maneuver-warfare advocate William S. Lind. Mr. Katz's letter was in response to Mr. Lind's January letter, "Synchronization: A Means Only," which dealt with synchronization as a means of achieving unity of effort in combat. Mr. Katz claims Mr. Lind's letter "scared" him, a claim I find says more about Mr. Katz than it does about Mr. Lind's ideas.

Mr. Katz's letter only in part actually replied to William Lind's letter. He claims that maneuver warfare is synonymous with AirLand Battle. AirLand Battle would be implemented with maneuver-style warfare, but maneuver-style warfare is an approach which need not be necessarily manifested in AirLand Battle. We would certainly have maneuver-style warfare without AirLand Battle.

Mr. Katz says of Mr. Lind: "He believes that an observation–decision–action cycle must be slow and must degenerate into attrition warfare." This is an absolute misrepresentation of Mr. Lind's actual words.

What Mr. Lind actually said in the last paragraph of his letter was this:

> As long as synchronization is understood that way [as a means to achieve unity of effort], it is helpful. If it becomes an end in itself, one that must be served regardless of how much time it requires, then it is a prescription for a slow observation–orientation–decision–action cycle and a descent into attrition warfare.

Mr. Lind clearly does not believe that the cycle must be slow and must result in attrition warfare, and he clearly wants to prevent this from coming about by not allowing synchronization to be used as a substitute for agility, *Schwerpunkt* and *Auftragstaktik*. He precisely and clearly explains the meanings and applications of these two German military terms, and it is unfair for Mr. Katz to say that he doesn't know what he's talking about.

Mr. Katz is off base in claiming: "[Lind] also believes that all attrition warfare is a 'no-no.' " What he does want to do is avoid winning by attrition trade-offs and rather seek victory by destroying the enemy's cohesion.

Mr. Lind has never denied that attrition of some sort would occur, but he doesn't want to win by attrition. Indeed, in his January letter, he specifically states: "Against competent opponents, maneuver warfare will involve hard, bloody fighting."

Mr. Katz says that when Gen. Bruce Clark was briefed on the AirLand Battle concept, he disliked it and advocated instead that our forces wear down and slow the Russian attack, hold while awaiting reinforcements and counterattack to drive the Russians back.

The general's approach is just what the old *Field Manual* 100–5 advocated. Many officers as well as civilian analysts did not believe that this attrition-through-firepower, "active" type of mobile defense would work effectively against Soviet multi-echeloned "surge" maneuver warfare because it yielded initiative to the enemy and because it would have been too difficult to move and concentrate units to weaken the enemy through firepower, all because Soviet doctrine advocates bypassing pockets of resistance.

The Army's concept of striking at Soviet uncommitted echelons with land forces in order to disrupt and delay their timely movements has received much ill-informed, unfair criticism. The so-called "second-echelon attack" concept has been developed to cope with Soviet multi-echelon surge doctrine. The initial Soviet attack units, and the units engaged at any one time, are not intended to win all by themselves.

Echelon after echelon would be committed and replaced by fresh units to maintain tempo, probe for weak spots and bore holes through defenses to hit at rear areas. Second-echelon attack is intended to disrupt the enemy's tempo in order to give our forces time to regroup and recover, as well as time to cope with the Soviet units actually on the attack. Second-echelon attack can, in one sense, be thought of as a type of spoiling attack.

The thinking behind second-echelon attack is sound. The approach advocated by Mr. Katz and other critics—that of applying all resources to immediate threats while ignoring future threats, ignoring the nature of multi-echeloned Soviet warfare, and disregarding the need for our forces to buy time to recover, regroup and resupply—is irresponsibly myopic and would play into the hands of Soviet offensive doctrine.

Suppose our side tries to cope with an attacking Soviet regiment's first echelon with a flank attack. To be successful, this counterattack must be executed before the second echelon, a few kilometers away, can arrive and interfere. Then it certainly makes sense to try to frustrate the movement of the second echelon.

Suppose the first echelon uncovers a weak spot in our force's defense. It makes sense to try to frustrate the arrival of the second echelon, which would exploit the weak spot before it could be covered.

JOSEPH FORBES
Pittsburgh, Pa.

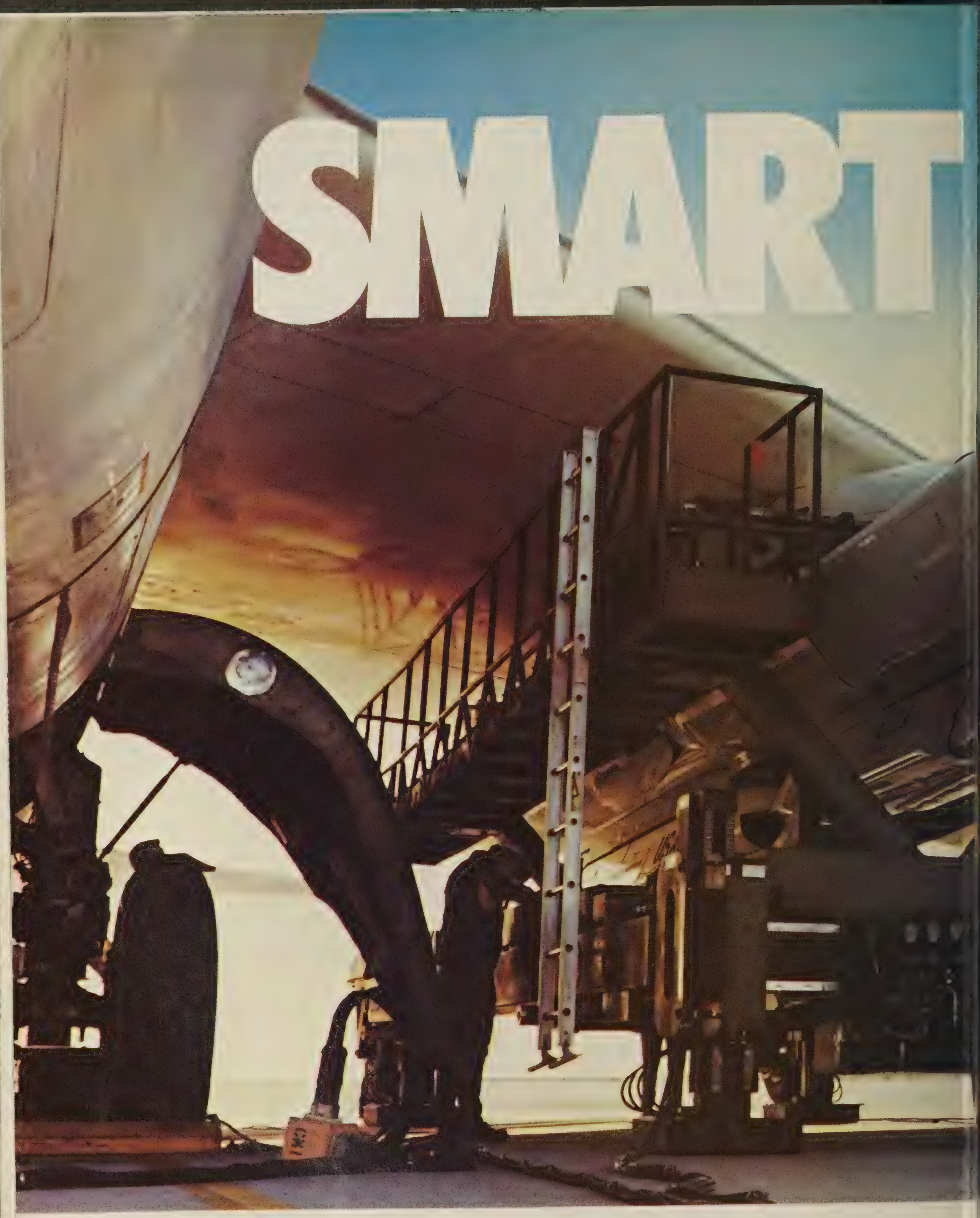
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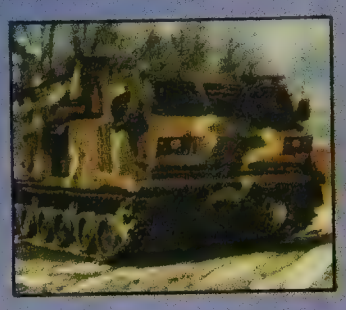
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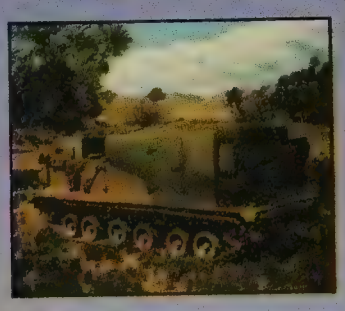
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Images Evoking Sadness, Guilt and Honor

Vietnam Memories: That War Was 'Different'

By Richard C. Cacioppe

The news media's coverage of the ten-year anniversary of the fall of South Vietnam has reawakened our awareness of that difficult period. I have watched this renewed interest in Vietnam and our involvement there with mixed emotions.

On the one hand, I am gratified to see that after a period of unnatural neglect, we now seem at least willing to talk about our involvement in a much less emotional manner. As a Vietnam veteran, I am not as pleased, however, to hear once again the discussions of right and wrong and analysis of the justness of our cause.

Front & Center

These controversial debates, by their very nature, invariably become subtle but clear indictments of the efforts of the 2.5 million American service members who served in Vietnam. I long for a television documentary which would simply state that many Americans left their loved ones after being called upon by the duly elected government of the United States. They performed their duties honorably in a difficult environment and returned home to resume their lives. What we have had instead is guilt-ridden analysis and exposés which are refinements and reiterations of earlier analysis and exposés.

In contrast to the media's treatment of the war, there does appear to be an emerging sympathy and belated sense of appreciation for Vietnam veterans by our fellow citizens. And yet I remain, and I suspect many of my fellow veterans remain, strangely unsettled by all of this attention to a part of our lives we had been conditioned to suppress.

When I first tried to understand my own uneasiness, I thought it might be because it was belated recognition for sacrifices I had made many years before. I know now that was not the case. My uneasiness stems instead from a composite picture, formed from over 20 years of images. (I served my first tour of duty in Vietnam in 1964.)

One image I have is of former President Jimmy Carter agonizing over how to entice the draft resisters back to the United States. His emphasis and interest in "healing the wounds of Vietnam" seemed to focus far more on those who



did not serve than those who did.

Then I have an image of those who fled this country during the war returning triumphantly across a bridge back into the United States. Although their jubilant supporters were small in number, their reception and press coverage exceeded that which most veterans received.

What suffering or hardship had these men endured? The strength of their commitment and espoused concern for mankind led almost all of them to Canada or Sweden. I would have respected them far more had they gone to aid the poor of Africa or South America. How hollow their concern for the Vietnamese seemed to me then as they fled to countries which could offer them a life-style closest to that which they had abandoned.

How much more hollow their concern for the Vietnamese people seems to me today. Large numbers of Vietnamese have fled the oppression of their Northern "liberators." Ten years after the fall of South Vietnam, thousands of Vietnamese remain in "re-education camps." The occupation of Cambodia and the large number of North Vietnamese troops in Laos confirm the "domino theory" which was ridiculed by the intelligentsia of the 1960s.

Yet these voices, which were so loud during the war, remain strangely muted on the very same issues today. Their silence is deafening for those of us who endured their criticism for years.

I also remember Jane Fonda touring Hanoi at the height of the war. While she publicly denounced U.S. "atrocities" against the North Vietnamese, American servicemen were being tortured several miles away. Imagine this country's reaction if either Betty Grable or Rita Hayworth had traveled to Manila to converse with the Japanese after the Bataan death march. But Vietnam was different, I was told. It must be so because today Jane Fonda is at the peak of her popularity, none the worse for her liaison with the enemy.

I recently added to my composite the sad image of a 70-year-old soldier trying to defend his honor. After having served this country for over 30 years and in three wars, Gen. William C. Westmoreland, U.S. Army, retired, was attacked by the press for not having accurately anticipated and reported enemy troop strength in 1968. Yet accurate assessments of enemy strength and intentions have always been difficult in war.

How would this country have reacted in 1947 to an exposé on Gen. Dwight D. Eisenhower's intelligence shortcomings before the Battle of the Bulge. In that battle, large numbers of German soldiers moved into position and attacked an unsuspecting U.S. Army.

Why didn't CBS, in 1952, investigate why Gen. Douglas MacArthur was surprised by one million Chinese at the Yalu River in 1950. Both of those soldiers received the well-deserved affections of a grateful nation when they returned home.

The commander of our forces in Vietnam returned to be called a liar. Once again, I am only able to conclude that

This Month's Cover



An East German watchtower looms foreboding-ly in the background behind this sign along the border between East and West Germany a few miles east of Bad Hersfeld, home of a squadron of the 11th Armored Cavalry Regiment, whose mission is to maintain surveillance at this meeting of the free and communist worlds. A glimpse of what it is like along this sinister barrier begins on Page 26. *(Photo by L. James Binder)*

it was because Vietnam was different.

I remember watching *The Best Years of Our Lives* as a young boy. It was a simple yet powerful movie that sympathetically showed the return of several servicemen at the end of World War II. The sacrifices these men had made were evident, and the love and gratitude they received were equally apparent.

In contrast, the most important movies about Vietnam showed crazed and doped GIs in *Apocalypse Now* and *The Deer Hunter* and Jane Fonda's version of the war and its aftermath in *Coming Home*. Here again, the message for me was that Vietnam was different.

The images are many, none individually significant. However, 20 years of them put together represent for me, and for my fellow veterans, a tapestry.

I want no sympathy now. I am truly grateful to my fellow citizens who are now realizing that we performed our duties honorably under difficult conditions. But after 20 years of these images it is clear to me that the only people who truly understand what it means to be a Vietnam veteran are other Vietnam veterans. For that reason, I feel a special kinship to the other men and women who served in Vietnam.

Vice Adm. James B. Stockdale, U.S. Navy, retired, a prisoner of the North Vietnamese for eight years, wrote eloquently about his feelings for his fellow prisoners:

> When you are alone and afraid and feel that your culture is slipping away, even though you are hanging onto your memories—memories of languages, of poetry, of prayers, of mathematics and so on—hanging on with your fingernails as best you can, and in spite of all your efforts, still see the bottom of the barrel coming up to meet you, and realize how thin and fragile our veneer of culture is, you suddenly know the truth that we all can become animals when cast adrift and tormented for a mere matter of months. It is then that you start having some very warm thoughts about the only life preserver within reach—that human mind, that human heart next door. You unabashedly tap to him that you love him when you know he's to be taken out for torture.

Even though we're not prisoners today, in a way, I think a small part of every Vietnam veteran remains in a cell quietly tapping to other veterans, tapping simply, "I understand, I love you."□

RICHARD C. CACIOPPE served in Vietnam in 1964 and returned in 1966 as the operations officer (Air) of the 1st Battalion, 14th Infantry, 25th Infantry Division. A graduate of the U.S. Military Academy (USMA), he is a lieutenant colonel in the Army Reserve, serving as a liaison officer with the admissions office of USMA.

Project Freedom Seeks Truth On Missing Soldiers in Asia

By Joe Kraus

After years of concentrated effort, accounting for thousands of American military men still listed as missing in action in Asia is imminent.

Col. Lewis Millet, U.S. Army, retired, of Idyllwild, Calif., has made several trips to South Korea in recent months. It has been a lot of work, but now, he says, a major effort is being made in that country to account for some 8,000 American soldiers still listed as missing during the Korean War.

Col. Millet, a Korean War veteran who was awarded the Medal of Honor, is national chairman of Project Freedom, an organization devoted to locating those missing in action (MIAs) and prisoners of war (POWs) in Asia.

While some 2,500 U.S. soldiers who fought in Vietnam are still listed as missing, nearly four times that number are still unaccounted for from the Korean War. Because of this larger number in Korea, Col. Millet's organization has been concentrating its efforts there.

The Korean War started after the North Koreans and the Chinese attacked South Korea on 27 June, 1950. In response to this, the free nations of the world, under the United Nations flag, sent fighting men to aid South Korea. Most of the troops that fought were American.

By the time the conflict was over, three years later, the communists in Korea had suffered at least 1,500,000 casualties. The United Nations forces suffered more than 400,000 men killed, wounded or missing. Of these, 153,000 were Americans, 260,000 were South Koreans and 12,000 were from other UN member countries.

The conflict, however, was not a conventional war. It was a war of the trenches, a war of patrols and a war of hand-to-hand small group battles. While these battles were being fought, peace talks were being held. The talks went on for two full years while the soldiers in the field fought to capture one hill after another.

It was on one of these hills that Col. Millet earned his Medal of Honor, the nation's highest award for valor. The commander of an infantry unit, he led three charges against Chinese forces that military historian S. L. A. Marshall later described as "the greatest bayonet attack by U.S. soldiers since Cold Harbor in the Civil War."

Years have passed since those fighting days, but those who fought there have not forgotten the friends who never made it home. It was because of this concern that Project Freedom was created. At the present time, the organization includes about 2,000 members, many of them veterans



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Col. Millet said that the South Korean overnment has been cooperative in proding escorts and interpreters to him in s quest for information on behalf of ie organization. He said maps were also rovided which showed the routes used y POWs and their captors during the ar. Col. Millet also said that people ho witnessed the activity were questoned and grave sites where Americans ere buried have been located.

"At the present time, newspapers throughut the region are printing stories concernig our efforts there," the colonel said. The government is also asking family iembers to mark the known graves of oreans so that other graves can be exavated in the hopes of finding unaccountd for American soldiers."

According to Col. Millet, teams are aleady being organized to dig up grave tes and send the remains to the United tates for possible identification. This lentification can be made by various ieans using dog tags, bits of clothing nd comparison of dental records.

A great deal of help in the effort to loate MIAs in South Korea has been proided by Jim Yeager, national coordinaor of Project Freedom, as well as Clyde ore, former member of Army Special orces who now serves as one of the dictors for Project Freedom. Both are orean War veterans.

Most recently, however, major assisance has been provided by Charles Lovn and Barry Rhodan. Both were memers of the 23rd Infantry Regiment in the orean War. Nearly 300 members of this egiment were killed in what was to be alled the "Sukchon Massacre."

Charles Lovin escaped unharmed, but arry Rhodan was shot in the stomach nd left for dead by his North Korean aptors. Before leaving the area, however, both witnessed the burial of their omrades. This area is now among those eing searched for the remains of missing mericans.

Col. Millet and his wife will continue o go back to South Korea to see what rogress is being made. Thanks to this atest effort, he believes some of the myseries of the war will be solved, but it nay take some time to get permission rom the North Korean government and ther communist nations to investigate n their regions.

Until then, however, Project Freedom vill continue in every other way possiple, Col. Millet said, to get the answers hat have long been withheld from famiies and friends in the United States. □

OE KRAUS is a journalist who has written for daily newspapers for 15 years. He is the author of some 150 magazine articles and is currently at work on several books.

Identity Problem for Retired Officers

Please Don't Call Me 'Mister'

By Col. Melvin H. Rosen
U.S. Army, retired

Scene: A waiting room outside one of the clinics at DeWitt Army Hospital. Time: 1975 (some five years after I had retired as a colonel after 34½ years of service in the U.S. Army).

An Army doctor (I could see his uniform trousers under his white medical coat) came into the waiting room and called "Mr. Rosen?" I followed him into the corridor out of earshot of the waiting room and looked at his name tag. For our purposes, let's say it read "Smith."

"Mr. Smith?" I queried.

"No—that's *Dr.* Smith," he countered.

"Doctor, how long did it take you to earn that title?"

"Eight years."

"And I'll bet it was eight years of blood, sweat and tears, wasn't it?"

"Yes, it was."

"Well, Doctor, let me tell you something. My title is right there on that paper you're holding. It took me 25 years (since he was including all his college years, I included my four years at the U.S. Military Academy) to earn my title —also of blood, sweat, and tears, except that in your case the blood was someone else's. In my case, it was my own!"

"Yes, sir, Col. Rosen."

Although this misunderstanding seems to be endemic in the medical community, it is by no means limited to that group. In 1983, I was working for a systems research firm under contract to support the Army. I frequently had to use a desk in the office of an active-duty lieutenant colonel in the Pentagon.

As an Army contractor employee for 13 years, I was accustomed to referring to myself as "Mr. Rosen" in all my contract dealings with the military to avoid giving the impression that I was an active-duty officer—even though many of the people with whom I dealt knew that I was a retired colonel. This is a generally accepted procedure among military contractors and has a valid purpose.

One day in answering a call from my mechanic reporting on the status of my car, I said, "Yes, this is Col. Rosen." After I had hung up the telephone, Lt. Col. Jones (not his real name, of course) said, "Mel, I heard you call yourself Col. Rosen. Isn't that improper? You are now no

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longer a colonel but a former or ex-colonel, aren't you?"

During 1984, I was receiving official correspondence from the U.S. Army Reserve Components and Administration Center addressed to "Mr. Melvin H. Rosen." That Center is the official repository of our records!

Intentional slights? Of course not! Stupidity? Hardly! Ignorance? No doubt about it!

In 1946, there was a hit comedy on Broadway—*Call Me Mister.* World War II was just over. Those who were in the military for the duration plus six months could hardly wait to get out. They had done their job and done it well, but now they wanted to revert to being civilians. They were not career soldiers, and most did not want to be.

I believe that the career soldier had and has a somewhat different attitude. Soldiering is our profession. The professional officer never ceases to be an officer—by choice and by law. Thus, the term "retired pay," for example, has caused much misunderstanding. It should more accurately be referred to as "retainer pay." What is particularly frustrating is the widespread lack of knowledge—not only among the general civilian public, the reserve components and the active Army, but among the retired regular Army officers themselves—of the status of the retired professional officer.



For several years and under several chiefs of staff, we have heard of the importance of the retired Army community. As a matter of fact, many retired regular Army officers have mobilization orders. This is one of the many differences between retired regular Army officers and retired reserve components officers.

Retired regular Army officers are subject to involuntary recall to active duty at the discretion of the secretary of the Army. Retired reserve components officers, on the other hand, may be involuntarily recalled to active duty only when Congress has declared war or a national emergency and then only when the secretary of the Army, with the approval of the secretary of defense, "determines that there are not enough qualified [Army] Reserves in an active status or in the inactive National Guard in the required category who are readily available. . . ."

There are many other differences between retired regular and reserve components officers, let alone the retired civilians with whom we are always being compared. Unlike the retired reserve components officer, the retired regular officer has several restrictions placed on him. My experience over the last several years indicates that even some retired regular officers need to be refreshed on some of these restrictions:

■ The law prohibits a retired regular officer from selling any supplies or war materials to any agency of the Department of Defense for a period of three years after retirement. For the purpose of this statute, selling has been broadly defined to include liaison activity with a view toward the ultimate consummation of a sale although the actual contract is subsequently negotiated by another person.

■ No retired regular officer may "represent any person in the sale of anything to the government through the department in whose service he holds a retired status." The prohibition in this statute is permanent. Note also that this statute uses the word "anything," whereas the former statute refers to "supplies or war materials."

■ The retired regular officer is restricted in the civilian jobs he can accept and in the pay he receives when he is working for the government. (Notwithstanding the frequent references we hear to "double dipping," the government saves money when it hires retired regular officers *vis-á-vis* civilians or retired reserve officers. A strong case can be made that, given personnel of equal ability, the government should be required, on the basis of economy, to hire the retired regular officer.)

■ Perhaps the least-well-known or remembered difference is that the *retired regular officer remains an officer of the U.S. Army.* As such, he remains subject to the Uniform Code of Military Justice.

It is obvious that there are considerable differences between the retired regular officer and the retired reserve components officer, let alone between both those officers and the retired civilian.

I have heard it said that it was the Vietnam era that took the pride of service out of some of us. I do not believe that for a moment! Pride is something only we can give up; nothing can take it away from us. So unless I am working within the DoD as a contractor employee please *don't* call me "Mister." □

COL. MELVIN H. ROSEN, U.S. Army retired, is a former commander at the U.S. Army Institute of Land Combat. Commissioned from the U.S. Military Academy in 1940, he served over 3 years in the field artillery. Since his retirement in 1970, he has worked on Army studies as an analyst and consultant for several Army contractors.

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The Editors

And They Fly Away

During World War II in Europe, the handling of liaison officers to and from a headquarters was a critical but hectic staff function, since all wanted only to "brief, debrief and depart" back to their units.

A newly assigned NCO asked the harried senior liaison officer, generally called "mother hen," "Sir, just what is a liaison officer?"

The colonel stared at his messy situation map and muttered through his teeth, "You cross a parrot with a pigeon and you've got one!"

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Soviet Power Emphasis Is Viewed as Desire to Avoid Nuclear Heat-Up

Contrary to assumptions that the Soviet Union has few qualms about the escalation of any future war in Europe into a nuclear conflict, the highly developed, offensively postured war machine it has concentrated in Eastern Europe is intended more to prevent such an escalation than to employ it.

By Maj. Gen. Edward B. Atkeson
U.S. Army, retired

The threat of Soviet military power which has hung over central Europe for the past 40 years has been a constantly evolving one. Change has not come rapidly, but it has been sure and far reaching. Even the most obvious dimensions of the threat, the huge tank formations, have changed from their original purpose as a means for exploiting tactical nuclear strikes to become primary striking instruments in their own right.

The highly developed, offensively postured war machine we see concentrated in Eastern Europe today is intended more to prevent a conflict from escalating to a nuclear exchange than it is to employ such weapons.

As paradoxical as it may seem, if the terrors of a nuclear holocaust are ever visited upon the peoples of central Europe, they are much more likely to be initiated by an order from the West than from the East.

It was in the late 1950s that the Soviets began the long process of mechanization and armored encapsulation of the vast infantry formations which had brought them victory in World War II. Marshal

Georgi K. Zhukov, wartime friend of Gen. Dwight D. Eisenhower, and Marshal Zhukov's successor as minister of defense, Marshal Rodion Y. Malinovsky, saw the nuclear weapon as the last word on the battlefield. They pressed hard for the transformation of the Red Army into the armored juggernaut we are familiar with today. They guessed that troops mounted in high-speed armored vehicles might survive and win under mushroom clouds, while traditional forces would be destroyed by the blast, heat and radiation of atomic weapons.

However, the decisive blows would be delivered by nuclear-tipped rockets and missiles—not by the mounted troops themselves. The soldiers were taught to line the floors of their vehicles with sandbags to enhance their protection from radiation as they trained to exploit nuclear strikes with quick thrusts across contaminated terrain.

For almost a decade, the Soviet military doctrine depicted nuclear holocaust as the inevitable issue of armed clash between the United States and the Soviet Union. Marshal Malinovsky argued that such a conflict would be a settlement of accounts between the great political camps with the most vital interests of each at stake. Under these circumstances, he insisted, it was unimaginable that either side could accept defeat without resort to the ultimate arbiter, the nuclear weapon.

On the one hand, particularly among Soviets who feared that nuclear war was inherently boundless (as most did), this belief stimulated interest in the concept of peaceful coexistence and in détente. The potential destructiveness of nuclear war was obvious, and in the view of many it relegated most differences between the Soviet Union and the United States to secondary importance.

On the other hand, the doctrine spurred Soviet efforts to expand their nuclear arsenal to unprecedented levels and to explore in detail theories of nuclear warfighting, survival and victory. What had been (and largely continues to be) unthinkable in the West became the subject of intense scrutiny and innovative adjustment of forces and techniques to support the survival of essential elements of society in the Soviet Union. Under the aegis of the legitimacy of superpower strategic equality, later codified in the Strategic Arms Limitation Talks (SALT), the Soviets strove to match the United States at the highest level of potential conflict—that of intercontinental strike by long-range bombers and missiles.

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Meanwhile, the Soviets realized that they had another problem. Of the five major members of the nuclear "club," the United States, the Soviet Union, Great Britain, France and China, four of them were hostile, and all four were developing nuclear forces on the Eurasian landmass which could reach the Soviet homeland. This was stiff medicine for congenital paranoiacs.

The Soviets thought this was an intolerable threat to their safety and invested heavily in intermediate and medium-range missiles and aircraft to ensure their unquestionable dominance of the hemisphere. In recent years this quest has been most clearly manifest in the widespread deployment of the mobile missile system, the SS-20.

'Whatever the level, an opponent must realize that the penalties for raising the intensity of the fight can be met by either equivalent or superior capabilities by the Soviets.'

At the tactical-operational level, NATO forces have long held a significant advantage. Early on, the United States developed highly compact nuclear shells which could be fired from most of the artillery pieces with which NATO forces were equipped. Above all, this aspect of NATO force posture has lent credence to the efficacy of deterrence through threat of nuclear escalation. It has been revealed that at one time the United States had as many as 7,000 nuclear warheads in Europe, many of them small, highly accurate artillery shells.

By the beginning of the current decade, the Soviets had developed their own nuclear artillery. They followed the U.S. path of initially providing the shells only for the larger-caliber cannon. Now, however, it appears that they have managed the miniaturization of nuclear explosives so that they can be fired from the standard divisional 152-mm self-propelled howitzer. If this is so, they may have made a substantial leap ahead of the West, considering the much larger number of artillery tubes in their forces.

With these developments, the Soviet nuclear posture appears to enjoy:

■ Strategic nuclear parity with the United States.

■ Eurasian-strategic nuclear superiority over all combinations of hemispheric competitors.

■ Probable tactical nuclear parity and a prospect for early superiority with respect to NATO. (There has never been any question of the Soviet nuclear supremacy on other potential fronts.)

These achievements come on top of the traditional Soviet superiority with conventional weapons. They demonstrate a clear intent on the Soviets' part to build a capability for successful fighting at any level of conflict. We must conclude that they seek effective escalation control over any potential adversary in their warfighting capabilities.

Whatever the level, an opponent must realize that the penalties for raising the intensity of the fight can be met by either equivalent or superior capabilities by the Soviets. That is a potent tool for deterrence of such escalation on the Soviet side.

Our knowledge of Soviet operational and tactical concepts confirms this judgment. Beginning in the mid-1970s, more and more discussion of conventional phases of conflict became the norm in Soviet journals. More frequently, Soviet exercises featured extended periods of conventional hostilities.

Nuclear conflict did not fade from their consciousness, but it no longer enjoyed the inevitability which Marshal Malinovsky attributed to it. The Soviets came to believe that conventional conflict lent itself to far fewer risks than reliance on nuclear weapons.

'Postwar Soviet ground operational concepts have never flagged in their emphasis on speed. As long as nuclear conflict was considered the norm, battle was seen as an intensive, destructive spasm, to be delivered and concluded as rapidly as possible.'

Moreover, conventional conflict cast warfare in a more familiar light—the realm of known quantities, assimilated experience, and most important of all, the calculable "correlation of forces," their term for quantification and objective assessment of both their own and their opponent's capabilities. The Soviets became more and more attracted to a concept of war involving only conventional operations, recognizing the advantages they would enjoy if conflict could be contained at that measure of intensity.

Shortly before his removal as chief of the Soviet General Staff last year, Marshal Nikolai V. Ogarkov advanced this thinking one step further. He remarked that qualitative changes in conventional munitions—longer ranges, greater accuracy and greater lethality—are bringing these weapons closer in effectiveness to nuclear systems. He asserted that these changes will inevitably change wars by placing more emphasis on improved conventional munitions.

Marshal Ogarkov also dismissed the notion of limited use of nuclear weapons as "Utopian," insisting that any use would "inevitably lead to the immediate use of the whole of the sides' nuclear arsenal." Even strategic weapons, he suggested, were of declining utility. He made it quite clear that he believes that the most dynamic areas of future military development lie in the area of high-technology conventional arms.

Postwar Soviet ground operational concepts have never flagged in their emphasis on speed. As long as nuclear conflict was considered the norm, battle was seen as an intensive, destructive spasm, to be delivered and concluded as rapidly as possible.

Any prolongation of the battle in the West was perceived as an inordinate waste of strength and an advantage to NATO as it would afford time for the alliance to organize and bring its superior resources into play. With the evolution in Soviet thinking of the possibility of conventional hostilities, the need for speed assumed even greater importance.

Marshal Ogarkov pointed out in the early 1980s that front level (equivalent to a western army group) offensive operations in World War II were often separated be pauses of five to seven days and sometimes more. These were necessary to resupply the forces, consolidate the gains and prepare for the next major offensive. Now, he said, there must be continuous operations; the enemy must be given no respite.

A major concern was that the enemy might have time to regroup his forces and perhaps to launch counterstrike. More compelling, however, was a realization of the risk that a nuclear-armed enemy would be afforded time to develop targets and to discuss and reach decisions regarding the use of nuclear weapons. However confident the Soviets may have been that in time they might build true tactical nuclear superiority, they clear

MAJ. GEN. EDWARD B. ATKESON, U.S. Army, retired, was national intelligence officer for general forces planning at Central Intelligence Agency headquarters.

'The Soviets make little differentiation in their writings between theater and strategic nuclear war, as is so often done in the West, particularly in the United States.'

y understood that escalation of a conventional conflict to a theater nuclear war would introduce great uncertainties, as well as intensifying the rate and extent of damage.

The Soviets make little differentiation n their writings between theater and strategic nuclear war, as is so often done in he West, particularly in the United States. This is partially due to their continuing nability to gauge with confidence the ikely outcome, once the use of nuclear weapons is initiated, and partially due to heir sense, as Europeans, that the United States might escape the penalties of nuclear war whereas they might not. In all heir planning, they seek a high degree of assurance that a given force applied against a given foe will attain predictable objectives. Their professional training is strongly oriented toward mathematical calculation of battlefield factors. Theater nuclear war remains a sort of wild card with which they are exceedingly uncomfortable. That is why escalation control s so important to them.

One technique they have developed to maintain the continuity of their attack involves the "operational maneuver group" (OMG). This is a high-speed exploitation force designed to operate deep in enemy rear areas. The force is rich in armor, mobile air defense, helicopters and self-propelled artillery. It may vary in size from a division to an independent corps, or perhaps even an army. The concept adds great continuity to operations and is designed to ensure that the defender is given no pause for regroupment or resupply. The OMG provides a relentlessness to the offensive which is intended to bring the entire conflict to a conclusion as rapidly as possible.

Another area in which we have seen significant progress on the Soviets' part is tactical air ground attack and battlefield interdiction capabilities. They are moving ahead rapidly with the deployment of long-range "Backfire" bombers and the conversion of fighter regiments to fighter-bomber units.

marines during a conventional war.

The submarines have no part to play, and yet they must be preserved in case of escalation of the fight to the strategic level. Western attack submarines, which see the Soviet missile submarines as their natural prey, are generally quieter and can stalk the Russians with conventional weapons before they would be called upon to launch their city-busting cargoes.

The Soviets have attempted to reduce the risk by developing protected sea "bastions" in waters close to home where other naval forces can intercede in the arcane struggles envisioned under the seas, but they have good cause for their concern.

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It is especially interesting to note that development of the Backfires and MiG-27 "Floggers" began in the mid-1970s, just as the Soviets began to seriously consider the possibilities of conventional war in Europe. It is apparent that a key function for which they were designed is deep strike against enemy air bases, missile sites, command and control nodes—anything that would affect the enemy's capability to launch nuclear weapons delivery systems. They want to build their capacity to quickly disarm an adversary of any ability to escalate the battle.

Little noticed among many Western military analysts is the extraordinary premium the Soviets appear prepared to pay to keep conflict at the conventional level. They must worry considerably about the safety of their ballistic missile-firing sub-

This is not to say that we in the West are any more secure than we were before the Soviets came around to the notion of conventional conflict. The change in their thinking has been in the method by which they might mount an assault—not in their determination to maintain a capability for doing so.

Gen. Bernard W. Rogers, the supreme allied commander, Europe, has spoken out many times on the disparities between NATO and Warsaw Pact conventional forces. He deplores the narrow margin he has before he might be compelled to call for allied resort to nuclear escalation. Considering the lengths to which the Soviets have gone to make that choice irrational, the alliance may be well advised to heed his calls for a strengthened conventional commitment.

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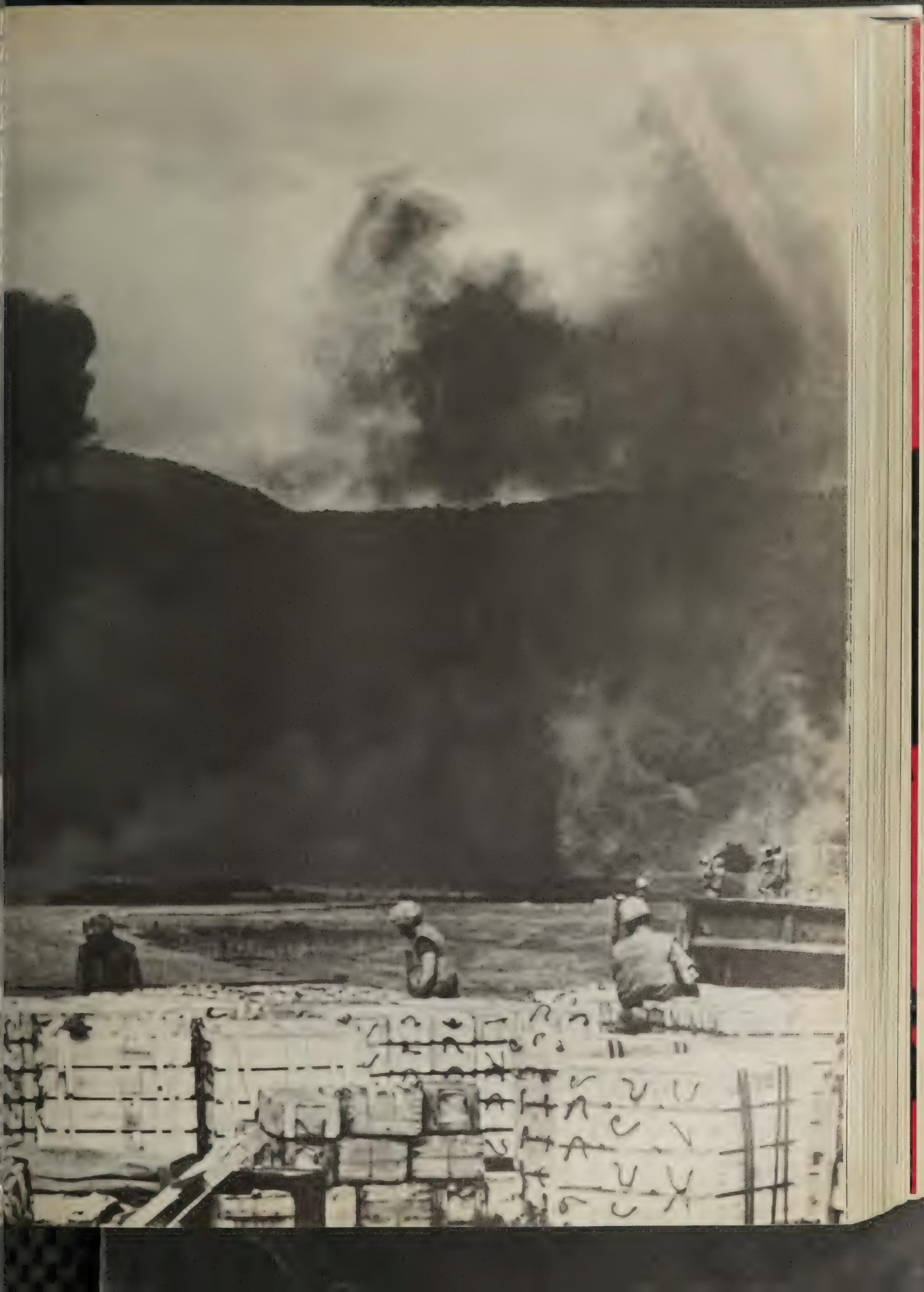
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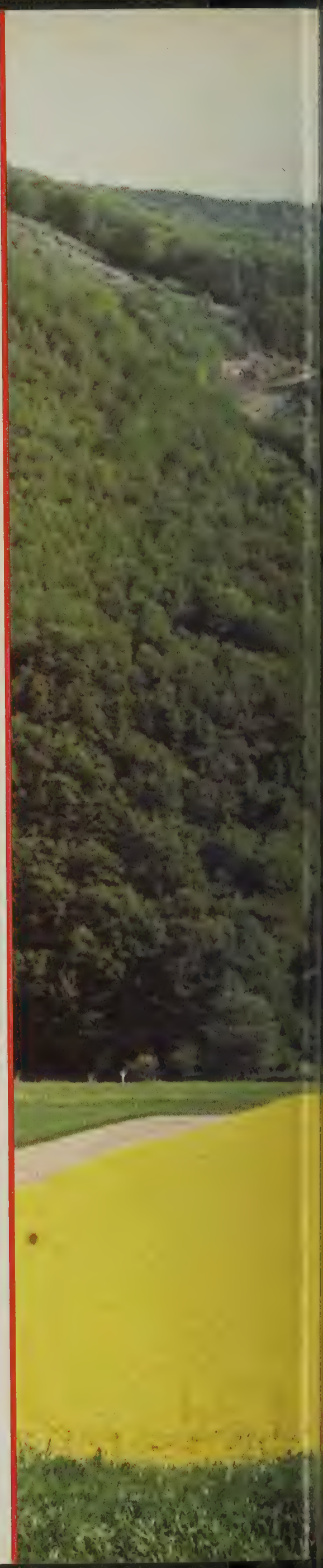


The Fence: Where Freedom Ends and Subjugation Begins

Photos and text by L. James Binder



A large German shepherd guard dog barks as its picture is taken from the West German side of the fence. Although these dogs usually are tethered to overhead lines, this one appeared to be roaming free.



But for its shape and the ubiquitous watchtowers and signs, it might be just another of the carefully tended fields that dominate the rich farming country lying to the east of historic Bad Hersfeld. Not a weed or even the footprint of a deer mars the surface of the narrow ribbon of earth as it snakes its way past ancient towns and through meadows and forests and loses itself in the distant haze.

Once well-traveled roads end abruptly in the brush a few feet away from its edges; it wends across foundations that once supported buildings; and neighbors once living on adjoining farms might as well be living in different countries. Though both are Germans, in fact they do, for this is the border between West and East Germany.

And in the unlikely event that any illusion might remain that this is growing ground, there is The Fence, a high, uncompromising barrier of steel latticework and barbed wire. Stretching across East Germany on the north and Czechoslovakia on the south, its uniqueness lies not in its length but in its purpose. Backed up by armed soldiers, sophisticated sensors and dogs, its objective is to keep in rather than to keep out.

The grim obstacle was performing with deadly efficiency several years ago when a young East German man was shot by border troops after he had crossed the



A large spray of flowers festoons the cross that was erected in the Bad Hersfeld area to mark the place at The Fence where a young East German man was shot and killed while trying to reach freedom.





Left, *an 11th Armored Cavalry Regiment trooper inspects some repair activity while on patrol.* Above, *a guard in a watchtower reacts to being photographed by taking a picture of the photographer. This was a rare occurrence because tower guards usually try to keep out of sight.*

carefully raked ground and was climbing The Fence over which lay freedom. A large wooden cross and a plaque bearing his picture and name mark the place he would have set foot had he not been cut down by communist gunfire.

This poignant monument to a tragedy is a familiar sight to troopers of the U.S. Army's 11th Armored Cavalry Regiment, whose mission it is to patrol the stretch of The Fence lying in central Germany's Fulda region. Great Britain patrols the sector lying to the north and the U.S. Army's 2nd Armored Cavalry Regiment is responsible for the area to the south.

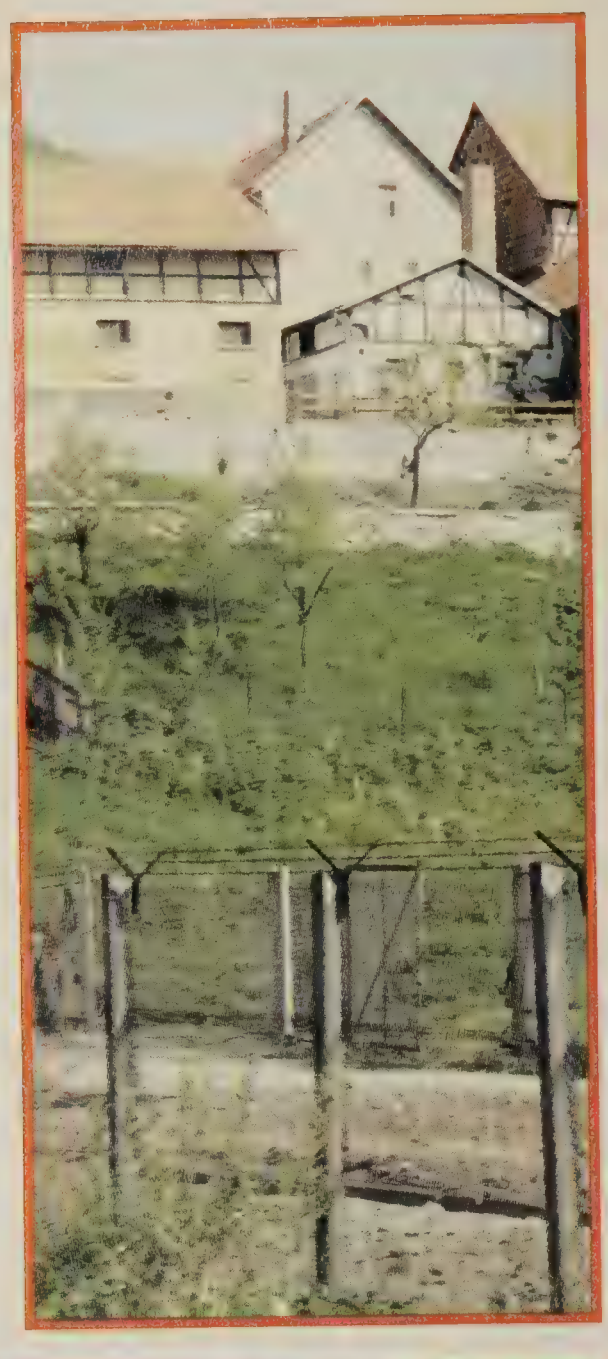
Both regiments maintain permanent vantage points—in which units are rotated in for varying periods to conduct around-the-clock surveillance from observation posts. Equipped with warm quarters, mess halls and recreation centers, the barbed wire-encircled installations feature such support as M1 tanks, which are always ready to move out at a few minutes' notice.

Patrolling the border is done on a random basis by foot, motor vehicle, armed personnel carrier and helicopter. Like so much of peacetime patrolling, it usually is without incident. To the trained eye, however, a seemingly placid landscape can turn up the kind of information an army must have to maintain maximum readiness: fresh construction, a change in patrolling patterns, a vehicle parked back in the trees—any activity, no matter how slight.

Occasionally, something spectacular will occur, such as the time a large Soviet Hind helicopter crashed and burned with its crew when its tail touched the ground, reportedly as it was trying to match the maneuvering of a U.S. helicopter that was patrolling its side of The Fence.

Known to the troopers who watch over it as "Freedom's Frontier," The Fence is regarded as so important a reminder of why the U.S. Army is in Europe that tours of the border by everyone from the families of servicemen to visiting dignitaries are a major activity.

"It is a moving experience for someone who has never seen to what lengths a country will go to keep its people from escaping," said a staff sergeant who has conducted many such visits. "People tend to get very quiet after they have seen The Fence."



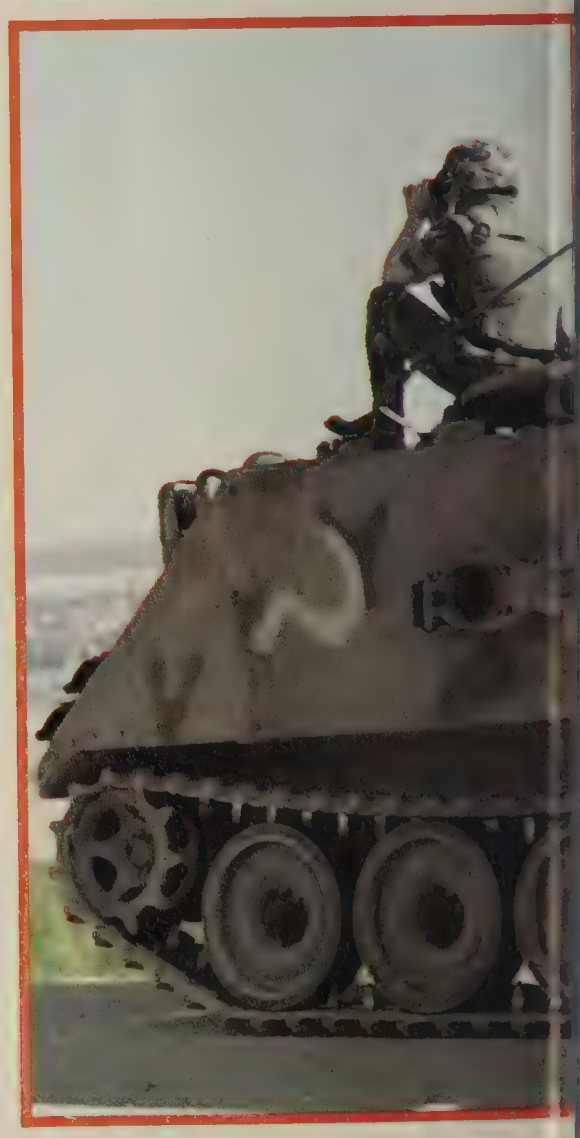
Left, *a village on the other side of the border. Occupants rarely are seen this close to The Fence.*

Below, *East German border guards walk along a section of The Fence that was undergoing repairs.*





Above, *an East German guard watches a U.S. Army patrol on the other side of the border. Because the scrutiny from the patrol continued, this man later tried to hide behind a post.*



Right, *an 11th Cavalry trooper surveys the border from the top of a personnel carrier. The M113 he sits upon is scheduled to be replaced by a new Bradley infantry fighting vehicle this summer.*

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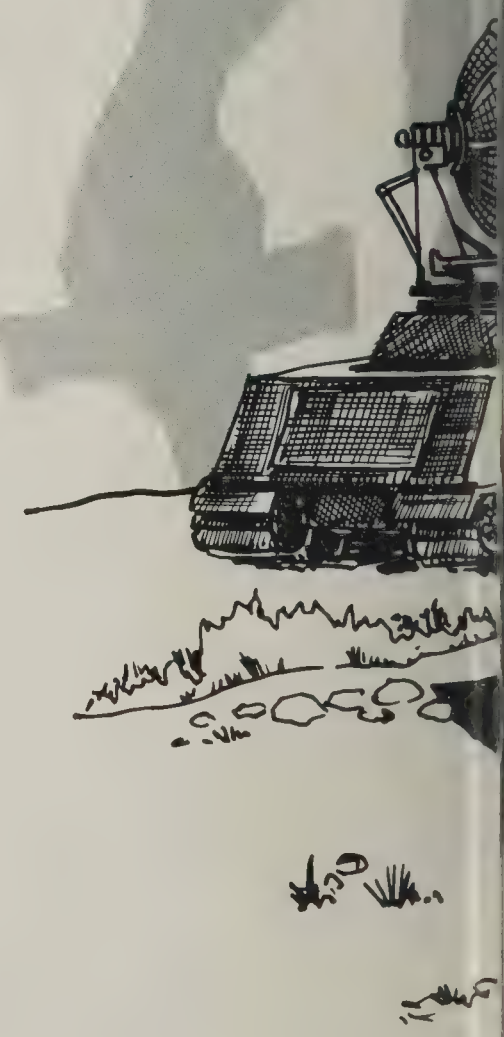
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Directed Energy Weapons and the Laws of Warfare





A new generation of tactical, direct-fire weapons is about to appear on the battlefield. These new arms, directed energy weapons (DEW), have the potential to perform more efficiently than conventional weapons in numerous battlefield tasks. As DEW are developed and as planning and training for operations in a directed energy environment are formulated, the legality of these weapons will be of central importance. The required legal review by the Judge Advocate General must resolve whether the procurement and intended use of DEW will be consistent with the obligations assumed by the United States under international law.

The types of directed energy most likely to reach the battlefield fall into three categories: laser, radio frequency and particle beam. All three types have some common characteristics that are essential to an understanding of their natural advantages and limitations:

■ Potential DEW (with the exception of nonnuclear electromagnetic pulses) are direct-fire systems; they must have a line of sight to hit a target and accordingly are not "indiscriminate" weapons.

■ Directed energy systems are fast. The beams from laser, radio frequency and particle beam weapons travel at near the speed of light. By way of example, in the time it takes a laser beam to travel one mile, a targeted aircraft traveling at Mach 2 moves slightly more than one-eighth of an inch.

■ Directed energy systems are adversely affected by precipitation, dust and smoke. These obscurants diminish the range and effectiveness of laser, particle beam or radio frequency weapons.

Laser systems project amplified beams of simulated light, resulting in a transfer of radiant energy. Depending on the power level of the system, damage from a laser may vary greatly. It can cause temporary blindness or can burn through the skin of an aircraft.

A medium- or high-powered laser could be mounted on a large vehicle or set up in a fixed site. Such a laser could be used



Before lasers, particle beams and radio frequencies begin to appear on the battlefield, the Army needs to think through the legal implications of their employment as antimateriel and antipersonnel weapons.

By Maj. Clark P. Campbell
and
Capt. Frederic L. Borch III

to destroy aircraft, thin-skinned vehicles and other light materiel. A laser requires state-of-the-art fire control and normally must be held on the target for several seconds to burn into the target's electronics, fuel or ammunition.

Unfortunately, the human eye can be blinded in milliseconds by a medium- or high-powered antimateriel laser weapon. Therefore, an ancillary effect would be to destroy the eyesight of a soldier.

Unlike a larger laser weapon intended for antimateriel missions, a low-powered, hand-held laser weapon could be both antimateriel and antipersonnel. It could be used to destroy optics, crack and melt a cockpit covering or vehicle windscreen and blind an enemy combatant.

The effectiveness of the laser weapon, however, can be kept to a minimum. As a nonballistic weapon (a laser hits where it is bore-sighted), it must have a line of sight to the target to be used successfully. Accordingly, terrain can be utilized to foil DEW in much the same way as it is used to avoid other types of direct fire.

Snow, rain and fog all limit the range and beam propagation of a laser as well. Artillery might be used to create dust and smoke to act as obscurants in the vicinity of a suspected enemy laser.

If and when a particle beam weapon appears on the battlefield, it might resemble in appearance and effect the "Death Ray" so popular in science fiction literature. This directed energy weapon directs a beam of atomic or subatomic particles that is either charged or neutral. It differs from other forms of directed energy in that it transmits matter, not just waves of energy.

The technology required for the successful production of a battlefield particle beam system does not exist at present. One principal obstacle is the lack of an existing power source. A particle beam weapon would require literally tons of chemical fuels, or, alternatively, a nuclear power source for operation.

However, if a particle beam weapon did appear, it would be a large, crew-served weapon, with these personnel separated from the beam projector to avoid the high levels of radiation which would be emitted. The weapon would make a noise like thunder each time it was fired. Its signature would be the visible sheath of ionized air around the beam itself.

Particle beams could be decisive antimateriel weapons, for they would penetrate and destroy all buildings, vehicles and armor in their line of sight. An ancillary effect of this directed energy weapon would be radiation burns or death for personnel who are near or in the path of the weapon when it is fired.

Countermeasures against particle beams are limited. One practical solution is to identify possible sites by detecting radiation. Additionally, because particle beams would be severely affected by rain, dust and electrical storms, military operations planning would have to consider atmospheric obscurants.

Radio frequency beams travel in much the same way as light waves travel, but they are absorbed and reflected differently. These radio frequency waves pass through glass, plastic and fabric with little or no energy loss and guide on metallic objects such as wires. Potential military uses include beams from microwave, millimeter wave, and nonnuclear electromagnetic pulse (EMP) sources.

Radio frequency weapons would use a parabolic dish antenna to direct the beam. The operational antimateriel range would be less than that of a laser, probably no more than several thousand meters.

Micro- and millimeter wave radio frequency beams could be used to both damage electronics and cause injury to personnel. The direct-fire beams would be invisible to the eye and travel at the speed of light. Electronic equipment would malfunction as key components were destroyed. Personnel engaged would receive intense pain from external burns and internal heating of bones and tissue. However, even at close range radio frequency weapons would take several seconds to cause incapacitating injuries to a soldier.

As a weapon, this directed energy would have little effect on personnel protected by an armored vehicle, sand bags or other significant cover. If a dismounted soldier hit by a radio frequency weapon immediately dropped to the ground and avoided more than several seconds of full exposure, his chances of survival would be excellent. A practical countermeasure would be to detect and destroy the parabolic antenna with artillery or direct fire before entering its field of fire.

EMP weaponry would be antimateriel only, as EMP waves have no antipersonnel capability. Accordingly, even though EMP weapons can be both direct and indirect fire in mode, neither delivery system would result in personnel injury.

The law of war is derived from two main sources: law-making treaties, such as the Hague Conventions of 1907 and the Geneva Conventions of 1949, and custom, that body of unwritten law firmly established by the custom of nation-states and well defined by recognized authorities on international law. Together, these treaties and custom act to protect both combatants and noncombatants from unnecessary suffering, safeguard the human rights of individuals who fall into the hands of the enemy and facilitate the restoration of peace.

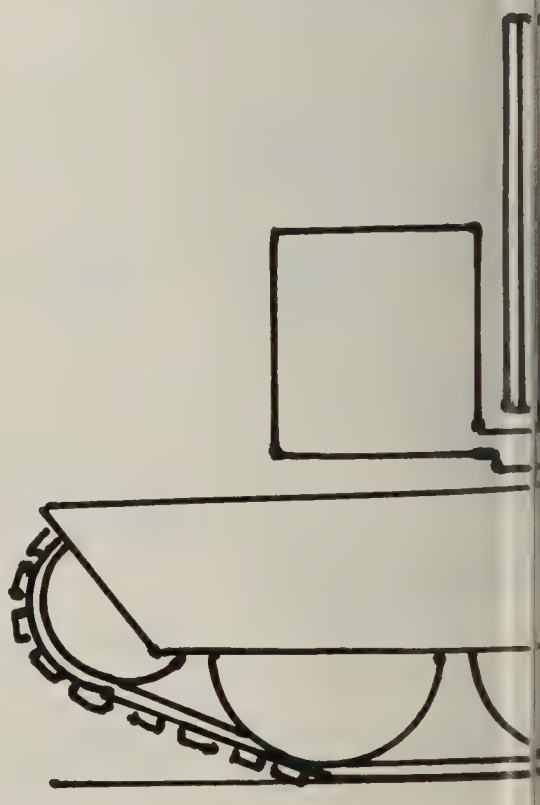
Yet, while it seeks to mitigate the suffering and destruction incident to war, the law of war recognizes that, in war, force is used to defeat the enemy. Stated differently, international law balances a humanitarian purpose against the principle of the military necessity, which permits any act necessary for the defeat of the enemy with the least possible expenditure of resources.

Accordingly, the law of war holds that the force used to accomplish the mission required by the principle of military necessity cannot needlessly cause or aggravate human suffering and damage to property. The law of war also makes illegal the use of force in excess of that necessary to accomplish the military mission. This principle can be roughly translated into a sanction against indiscriminate attack. There must be some military advantage to be gained by employment of a particular weapon in a particular setting.

Finally, these two principles—the prohibition against inflicting unnecessary suffering and the requirement for military gain in the use of a weapon—give rise to the principle of proportionality. Force may be used only to the extent that suffering and destruction do not exceed the force required to defeat the enemy. Whether a weapon inflicts unnecessary suffering or constitutes an indiscriminate destructive force is dependent on the relationship of the military mission to the foreseeable suffering caused.

Before evaluating the legality of DEW it is important to discuss further the principles of unnecessary suffering and indiscriminate attack, analyzed with the concept of proportionality in mind.

Under Article 23 of the Hague regula



MAJ. CLARK P. CAMPBELL is the deputy commander, 4th Battalion (Airborne), 325th Infantry, in Vicenza, Italy. A graduate of Norwich University, he was the project officer for directed energy concepts at the Combined Arms Combat Development Activity, Ft. Leavenworth, Kan. CAPT. FREDERIC L. BORCH III is the judge advocate for the 4th Battalion, 325th Infantry. A graduate of Davidson College, he received his law degree from the University of North Carolina and a master's degree in law from the University of Brussels, Belgium.

tions, it is impermissible "to employ arms, projectiles, or materials of a nature calculated to cause unnecessary suffering." By the rule of proportionality, it is clear that the development and use of a weapon is forbidden where it inflicts injury, suffering or damage to property unnecessary to the accomplishment of legitimate military requirements.

What is unnecessary suffering? The U.S. view is that any legal test for such suffering is a subjective one. A weapon does not cause unnecessary suffering until the suffering inflicted clearly outweighs the military advantages reasonably seen as a result of the weapon's use. Factors to be weighed include the weapon's effectiveness in destroying or neutralizing enemy materiel, its effectiveness against particular targets, its ability to interdict enemy lines of communication and to affect morale, its cost, its effectiveness in providing security for friendly troops and the availability of alternative weapons.

Measured by these criteria, a weapon's legality is controlled principally by its intended use and the effect of that use. The targeting of the weapon is crucial in determining whether a weapon contravenes the criterion of unnecessary suffering.

In this regard, the effect of the weapon on enemy combatants will be crucial, but not necessarily controlling. By way of example, high-explosive antitank (HEAT) munitions, standard in virtually every world army, were developed and are used as antimateriel weapons. They are designed to "kill" enemy armor, not personnel. The HEAT round primarily attacks the materiel parts of the weapon system: target acquisition capability, firepower and mobility.

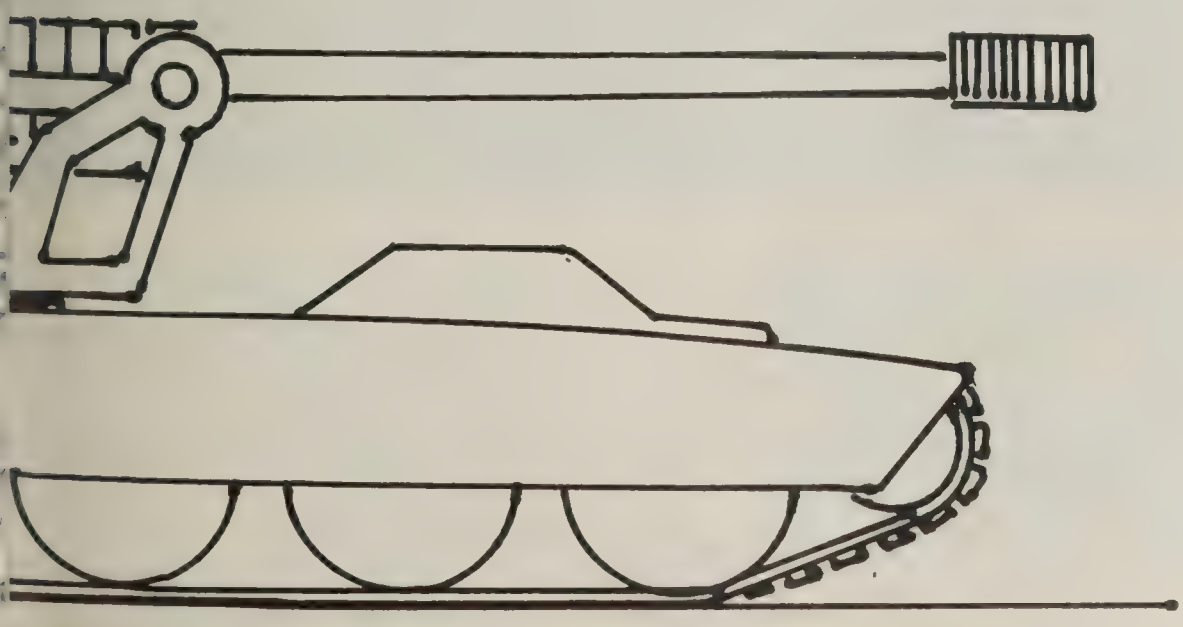
If the tank is occupied, however, an ancillary result is the potential death of the crew. Obviously, the amount of energy used to destroy the vehicle is far beyond the force needed to kill enemy soldiers in the open. However, as the weapon's purpose is to kill the enemy vehicle, the incidental injury or death of the enemy is a proportional ancillary effect. The proportionality test focuses on the destruction of the whole tank in determining the legality of the weapon.

Without evidence that a munition of less energy could accomplish the same task with equal efficiency, the HEAT round is legally permissible and does not cause unnecessary suffering, according to a recent letter to the authors from Mr. Hays Parks, Office of the Judge Advocate General.

Customary international law requires that military operations be restricted to a legitimate military target. Such a target can be either a combatant or any object which makes an effective contribution to the enemy's military operations, such as communications facilities and defense industries. A legitimate target also can be a geographical area, such as a choke point along an avenue of approach.

The law of war prohibits the targeting of noncombatants (thus an attack which seeks to terrorize the civilian population is inherently illegal). By the rule of proportionality, attacking a legitimate target may also be forbidden if the effects of the attack would be indiscriminate. An indiscriminate attack is a bombardment or shelling which treats as a single target several distinct legitimate objectives situated in a civilian-populated city.

However, if the several distinct targets cannot be attacked separately because of a lack of available ordnance or enemy air defense, then such an attack is legal under the law of war if the injury to civilians and their property incident to the attack is not disproportionate to the military advantage thought to be gained.



Applied to weaponry, the legal test of an indiscriminate attack is met when the "risk of civilian loss [is] clearly disproportionate to the military advantage anticipated." A weapon, therefore, becomes unlawful when the military advantages reasonably expected from the weapon's use are exceeded by the incidental harm to civilians and their property. As a practical matter, this test is difficult to apply, as any weapon can be used to attack indiscriminately. The focus then must be on whether the incidental harm is unnecessary or excessive.

In addition to the criteria of unnecessary suffering and indiscriminate attack, it has been argued that other factors, such as public opinion and the laws of humanity, must be considered in examining the legality of a particular weapon. Under these criteria, a weapon is illegal if contrary to the principles of humanity as conceived by the general public. By way of example, the abhorrent nature of a weapon or the ecological damage caused by it have been proffered as violations of public opinion.

As a test for evaluating a weapon's legality, the public opinion criterion does not have general acceptance. The test fails to recognize the basic nature of war —fundamentally opposed interests locked in conflict on the battlefield. Additionally, the general public probably will never be able to balance the competing interests of humanity with military necessity.

Applying the principles of international law to the design and development of a new weapon, it is clear that the new weapon itself cannot have intrinsic properties which make the military advantage to be gained from its production out of proportion to the loss of life and damage to property which it will cause. Furthermore, the rule of proportionality means that the use of a new weapon cannot affect persons or property in a way disproportionate to the need to accomplish the mission.

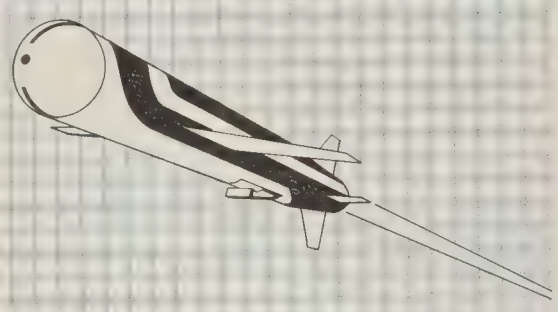
As the determination of a weapon's legality is based on the intended use of the weapon, and accordingly whether that use results in unnecessary suffering or indiscriminate attack, it follows that DEW are not illegal *per se*. There is nothing inherent in a laser, particle beam or radio frequency weapon which would make its design, development or use a violation of the law of war. Use is the determinative factor.

If a particular directed energy weapon is designed as an antimateriel weapon,

MISSION: ELECTRONICS
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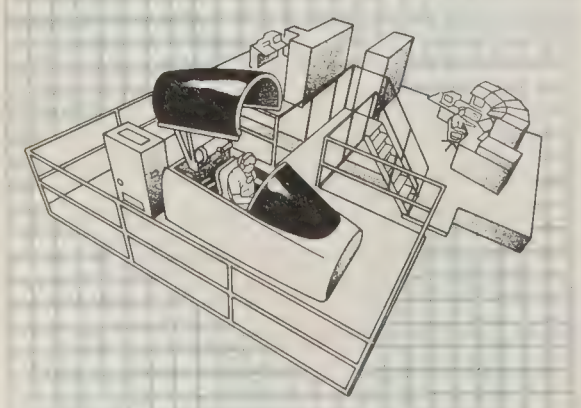
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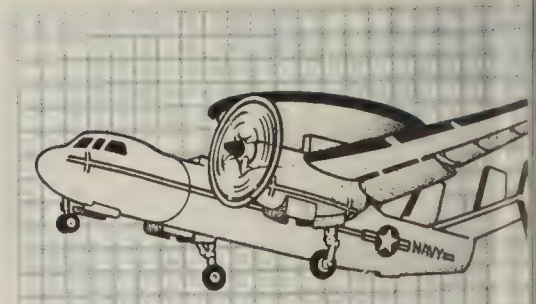
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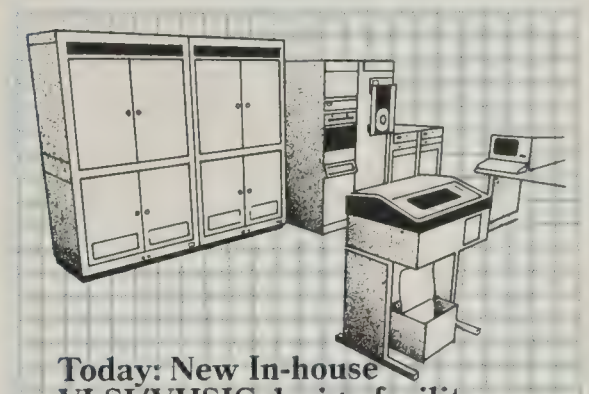


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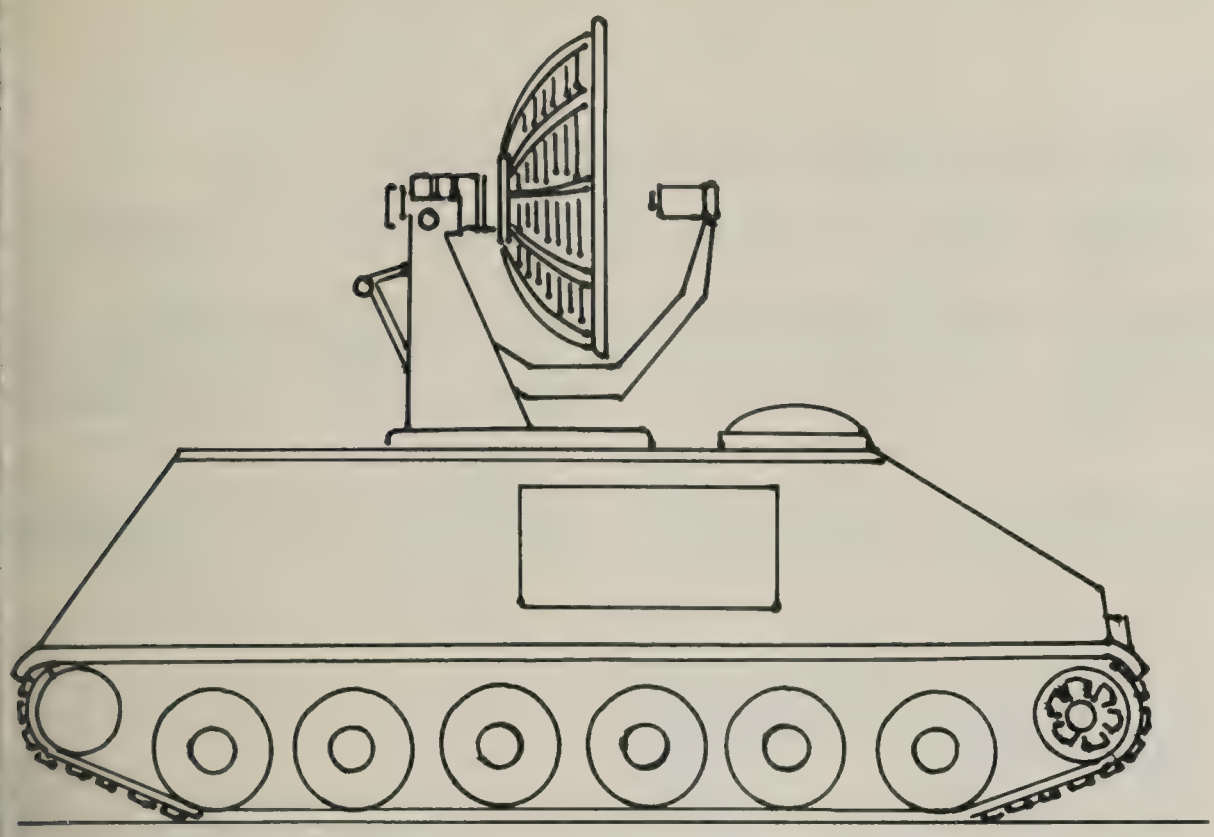
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the controlling legal issue will be whether the effect on ancillary soft targets would be more harmful to enemy personnel than the military advantage expected to be gained. Thus, if a fixed, high-powered laser is used to destroy an aircraft by igniting its fuel cells, or a small, more mobile laser weapon is used to destroy optics and crack or melt cockpit coverings and vehicle windscreens, the effect on soldiers in these vehicles could be death, burns or blindness. The rule of proportionality would indicate that these ancillary effects do not cause unnecessary suffering.

Antiarmor rounds used today by all modern military forces have similar ancillary effects, yet do not violate the prohibition on unnecessary suffering. Additionally, the accuracy of a laser weapon makes it an inherently discriminate weapon, thus not illegal under any test of indiscriminate attack.

The argument that a laser weapon used solely as an antipersonnel weapon causes unnecessary suffering is not convincing. Blindness is a totally incapacitating injury for a soldier on the modern battlefield; hence, the value of a laser weapon would be great. Furthermore, as blindness and not death is the result, it may be argued that the weapon is actually more humane, as it does not extinguish life as it renders enemy personnel *hors de combat*.

Particle beam weaponry also will be antimateriel. The catastrophic effects of this directed energy weapon against all targets make it easier to argue unnecessary suffering. However, there is nothing inherently different between the destruction wrought by a particle beam and the mass destruction which results from the use of a thermonuclear weapon.

If a thermonuclear device targeted against a legitimate military target has the ancillary effect of destroying absolutely a medium-sized city, causing death and injury to personnel and poisoning the environment, the use of a particle beam weapon to totally destroy a discrete materiel target and its personnel does not result in unnecessary suffering or an indiscriminate attack. Again, the discriminate capability of the particle beam weapon makes it arguably more legal under the law of war than a nuclear weapon, the legality of which is established under customary international law.

Radio frequency weapons, used as antimateriel weapons to damage electronics and other such hardware, are definitely permissible. (The potential indirect-fire delivery of EMP weaponry and its indiscriminate effects need not be addressed, as EMP causes neither injury nor death to personnel.) The military advantage to be gained from defeating the electronic capability of the enemy is immense.

The ancillary effect of burned skin and heated bones, while it may mean intense suffering, is no greater than the effects resulting from the use of napalm or other incendiary weaponry. The development and use of radio frequency weapons solely to injure or kill personnel, however, may be proscribed by the law of war.

As an example, flame weapons are not to be used against troops in the open because the availability of alternative weapons and the severity of the burn injuries to personnel render it illegal by the principle of unnecessary suffering. Therefore, it follows that radio frequency weaponry, as it produces similar effects, may be prohibited where used solely as an antipersonnel weapon. However, a radio frequency weapon might legally be used to create a barrier where the initial effects would be nonlethal. Upon entering the radio frequency beam, an enemy soldier would feel pain and be able to retreat from the beam's effect without permanent injury. This system certainly would be more humane than a standard minefield.

The design, development and manufacture of DEW are permitted under international law. Measured against the tests of unnecessary suffering, indiscriminate attack and the rule of proportionality, laser, particle beam and radio frequency directed energy all are legal when employed as antimateriel weapons. For sole use an antipersonnel weapons, laser and particle beam weaponry are legal under the law of war. However, radio frequency weapons could fall afoul of international law if employed to kill or seriously injure instead of repel enemy personnel.

Army Talk

Several years before I came into the service I was warned that the Army had a vocabulary all its own. This became apparent to me through my four years of military science, during which I picked up bits and pieces of "Army talk" (AT). This language really affected me during my quartermaster officer basic course.

For the first 12 weeks I was baffled by a myriad of new acronyms. That all changed one day when I had an experience which indicated to me that I had nearly gotten a handle on AT.

My class was planning a field training exercise and I had been appointed mess officer. I then had to get in touch with the sergeant who would be in charge of the kitchen tent. I picked up the phone and without the slightest hesitation uttered the following AT sentence:

"This is Lt. Thompson, I need to speak to the NCOIC of the MKT for the FTX of the QMOBC."

Amazingly enough the response was, "Hold on, sir."

2ND LT. PHILLIP A. THOMPSON

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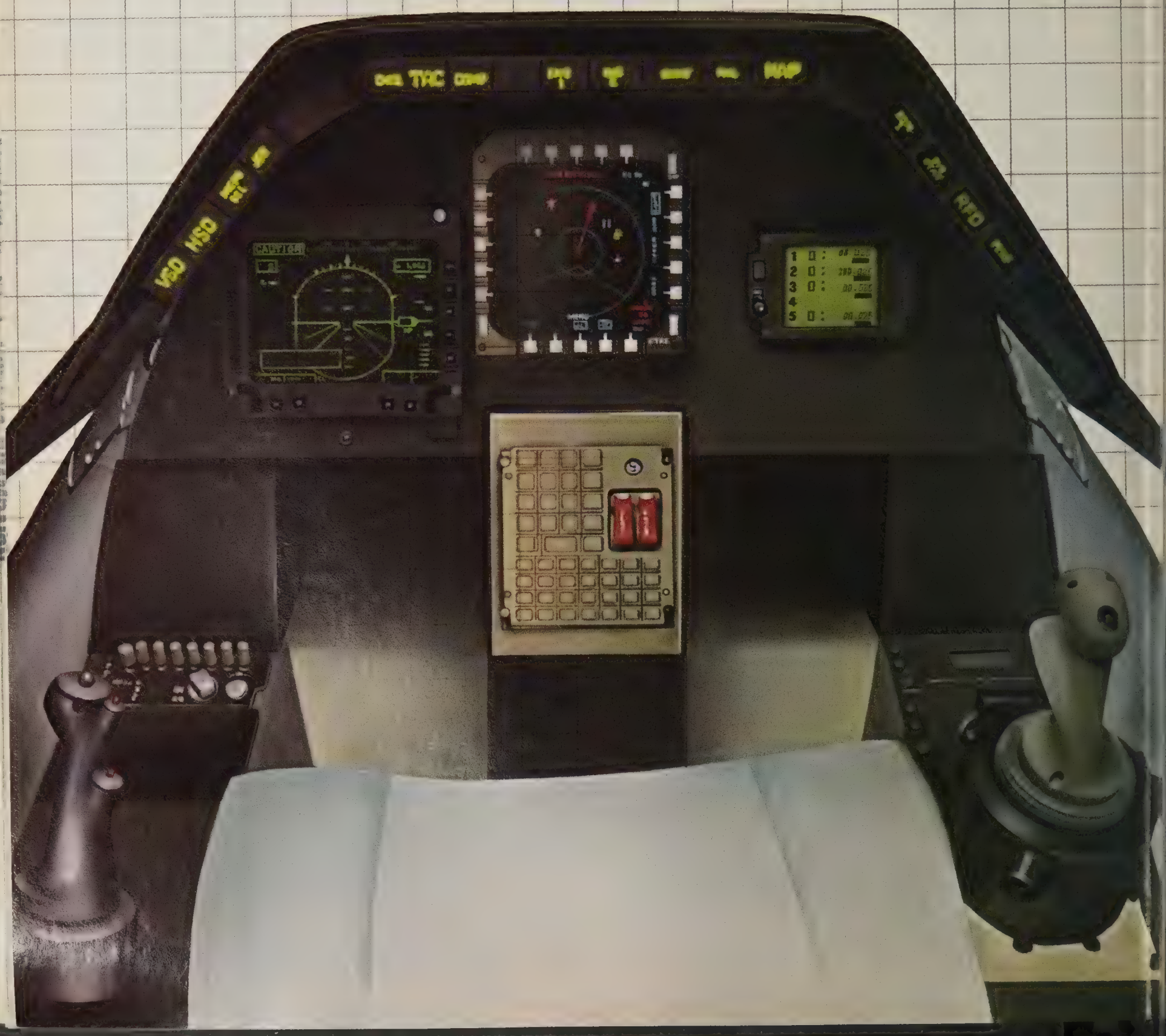
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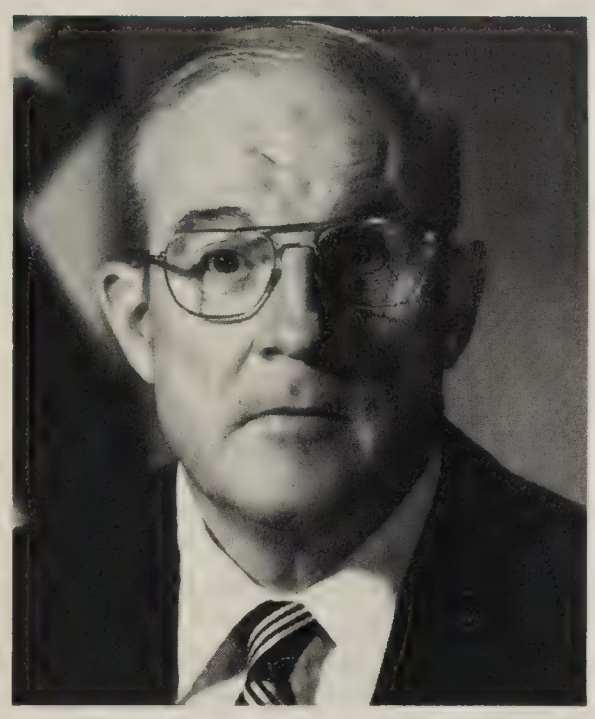
A Status Report from the Under Secretary

Getting Airborne with Army's New Light Helicopter Program

Advance developments now under way in rotary-wing technology are pointed at the formal start of a program for the "light helicopter, experimental" (LHX), perhaps as early as 1987. The preliminary technology programs are deemed vital to the future of Army aviation and have captured the earnest attention of the entire helicopter industry. If all goes well, a full-scale LHX development effort would open a multibillion dollar program for as many as 5,000 aircraft to replace the Army's aging inventory of light utility, scout and attack helicopters.

Indeed, LHX is the only new program start on the horizon whose magnitude rivals that of the Army's "Big Five" of the 1970s: M1 tank, Patriot air-defense missile system, M2 and M3 Bradley fighting vehicles and the UH-60 Blackhawk and AH-64 Apache helicopters—the foundation of the current modernization program.

The Hon. James R. Ambrose, under secretary of the Army, has played a key role in the conception of LHX and in the management of its technology programs. In a recent interview, he discussed the status of the programs and some of their many ramifications with ARMY *Editor in Chief L. James Binder and Associate Editor Eric C. Ludvigsen:*



James R. Ambrose

Q. Why is the LHX needed?

A. Essentially, the challenge [is] "Let's see if an LHX *is* needed," [a] distinction that seems to be missed. We haven't yet fully made up our minds. If you can do this and that, then it looks as though there'd be a big payoff economically. The reason is that the aircraft in the lower end of the fleet—lower end of gross weight—are uniformly quite old already. Even in the best of worlds—assuming effective development and procurement cycles—it'll be the end of the century or beyond before we get rid of those. There was no plan to replace these. Nor was there any plan to buy enough Blackhawks to replace the entire UH-1 "Huey" fleet.

The same thing is true of most of the OH-6 and OH-58 fleet, except for the relatively small number of AHIP [Army helicopter improvement program] versions of OH-58s. Also, the Apache AH-64 was not being bought in enough quantity to succeed the entire AH-1 fleet. So, altogether, we have about 7,000 or 8,000 of these older airplanes—and I think the average age would be 30 to 40 years before they would be replaced with anything if you start right now. But there was no plan to do that, so that makes them even older.

It seems quite clear to me that a fleet of airplanes that's 40 or 50 years old costs too much to maintain. Inevitably, people come up with schemes for patching them up. There has been a "Cobra 2000" scheme, for example, around here. Well, the costs are a couple of billion dollars or more, and even then, you're running at the ragged edge of performance. Probably you could put a new motor on it and so forth, but that isn't too efficient. So I said a couple of years ago, when I was given these paper representations [that] spoke about commonality, "Why not? Let's see if you're right!" That transformed the LHX program from on-going rhetoric into a serious effort to show the feasibility of reaching the objectives that were laid out. And with the notion that if the feasibility is shown, *if* the economics prove out in the analysis—and the analyses depend on achieving the objective, of course—then it would appear that you can save a lot of money—tens of billions of dollars—over a 20-year period.

Q. What would account for savings of that size?

A. The reasons are really quite simple. We would expect to be able to get enough improvement in productivity out of a new airplane, both the fighting and utility roles, that we can do perhaps with 5,000 light helicopters instead of the 7,000 or 8,000 we have now. A smaller fleet has great consequences for operating costs, reducing the requirements for pilots, training, maintenance facilities, and people and general support.

We said, "Let's see if we can cut the maintenance costs in half." I'm inclined to think that in laying down that objective, I undershot. It would appear they're having too easy a time to make it, but still if it cuts it in half—the operating costs, fuel and the like—that's a break. Over 20 years, that's a lot of money, and the reliability is supposed to go up.

If we can achieve these things, then the LHX program can defend itself on pure economics. If we don't get the economics, then I don't think there will be an LHX program. I think we have forced the system—both inside the government, the Army in particular, and the contractor chain—to work much more seriously

at it than if we'd said, "Let's have a paper drill, and the best liar gets the contract," and then you find out later. This way, the whole industry is hot after this thing.

Q. What can you tell us about the structure of the program?

A. We've got an agreement and funding to go ahead with the engine first, which is a sensible way to both get it done on a timely basis and to keep the airframe people from running off and saying, "We need new engines because, would you believe, our airplane is bigger than we thought it was going to be."

The critical point for the engine will be testing it for enough hours to know the exact performance. We can't forecast a production date until we reach that point.

We did one other thing that I don't think too much notice has been taken of and it should be—what notice has been taken has been mostly erroneous, or misunderstood notice.

One of the problems the historical record shows is that you shrink the engine size down so that it just barely serves the described function and purpose. Then the airplane is designed to exactly use up all of that capacity—almost. Theoretically, maybe five percent is left over. Then the engine falls short of performance, and the airplane grows late, and we spend money that's hidden from exact view, because you go on a witch hunt for weight, or a witch hunt for performance, or you try to run at higher temperatures, or whatever it may be. Those hidden costs are all too characteristic.

And the other thing that happens, which is not hidden but which appears much too soon, is to press for a re-engining.

That's happened on essentially every [helicopter development] except the Apache, [where] the problem showed up in a form which could only be resolved in the development cycle by putting in a new engine. They're the exception—they got out of the thing by the fortuitous occurrence of the engine having been developed for another program which is much bigger.

So, I said, "Let's make the engine bigger than you absolutely need, and let's make the airplane smaller." And these have been duly recorded in numbers of 8,000 pounds gross weight of the airplane, 1,200 horsepower for the engine. The idea was to build in a margin of maybe 25 or 30 percent and leave it alone, so that if by chance the weight grew—of the airplane, and I mean the contents as well as the airplane itself—or the engine came up a little short, you wouldn't have to go back over all that territory.

To give you some feeling for this, the Army, if it followed the old methodology, would design an airplane that weighed 9,000-some pounds, and put in an 800 and some horsepower engine, and that's where you get into trouble.

The system—and I include both government and contractor systems—is having some trouble accepting that. So you see the inevitable, "It's there, so we'll use it" kind of activity, and it's a constant job of pushing them back and saying, "That's reserve to help me out later on, not now." It will be a fairly stringent test of the discipline of this place to see if they can do it.

Q. If you haven't really agreed yet on the feasibility, when would you expect that to be?

A. Around the first or middle of the year after next.

Q. And at that point, if the aircraft industry has built these things, could you use them in other ways?

A. Well, they aren't building anything except test [items]. They're not prototypes—we don't have a full-scale engineering program going. What we said was pick out the things that are in question. And that brings you to the one-pilot [issue]. Can you run a thing like this with one pilot? Apart from psychology, is the work load feasible, and so on.

There are questions of avionics feasibility that get down to just how big a computer can you put in how little a flight package and a whole range of these things. They're working with simulators and some of the contractors have actually built kluges [test housings] onto existing aircraft to make flight tests and feasibility studies. Quite a bit of work is going on about redundant controls. So rather than embark on a completely committed full-scale engineering program, we've put together a program which has an acronym "ARTI" [advanced rotorcraft technology integration].

Basically it said to industry: "Here's some money. It's a prudent thing to spend, in this case one or two hundred million dollars, when the eventual tab is going to be $20 billion. Now spend it in those places where the credibility—the risk—is the highest and be prepared to show up in response to a formal proposal and some testimony as to whether we can make it or not in the next year or two."

Q. When do you expect the first LHX to reach the field?

A. Sometime between 1992 and 1995

Q. You mentioned a program cost o $20 billion. I've seen $30 billion and a high as $40 billion. What are these fig ures based on?

A. Well, you have to decide what yea dollars. In current dollars, fiscal 1985 say, one objective is to see if you ca do it for between five and six millio bucks per airplane for the attack version and four to five million for the utilit version. Then you multiply half [of th fleet] by five thousand to six, and th other half by [four to five]. The tota number is not a settled thing—it's a vari able [dependent upon] the productivit involved.

Now, if you turn all that into "som other year" dollars, then it might be 3 or 40 billion—so it's a big program, there no question about that. If you sweep u all the places where money gets spent to keep old ones [aircraft], increasin costs for spare parts, product improve ment programs, safety related things, op erating costs—you will spend more tha that if you don't change the system That's our thesis and that's the argumer for doing it.

If you can't save the money, then a most certainly it will make more sens to go buy more Blackhawks and mo Apaches. But even those are fairly ol airplanes by that time period, so we wi need to come to grips with newer ai planes sometime in the next few year anyway. It seemed to me, and to tho of us who manage this place, that the was a chance we could save considerab more money to run at it whole hog rat er than if we did it in separate program

Q. Have you tested the wind at all far as Congress is concerned?

A. Oh, sure! You get the entire gamu There are those who don't understa why you want to take so long, and tho who don't understand why you want spend $20 billion on a single progra and everything in between. My plea wi Congress has been: "Hold until we g through this first phase. Give us th much money, but keep a rope arou the full-scale development program un you and we are persuaded."

The problem you run into is they do understand that that is in fact the situ tion. I think some of the people on t Hill are more inclined to see it as a "ca el's nose" thing. Part of the reason w



Concept for a scout-attack version of the LHX by a Boeing Vertol artist. Boeing has teamed with Sikorsky for the competition, which also involves Bell Helicopter Textron and Hughes Helicopters as lead contractors on current LHX technology programs.

they look at it that way is that, under the methodology of the place, you have to mark out the amount of money that this program is estimated to cost in each of the next five or six years under this POM [program objective memorandum] process. And that information gets over to the Hill as soon as it is created.

From [that] point, then, they start seeing billions of dollars and they say, "Look, you have this thing well under way." They don't put any credit on these decision points and I suspect the historical record supports their suspicions. There is no other way to do it—we have no other way of offering future-years planning except to mark the money against the line.

Q. There seems to be a lot of ferment within the Army on requirements such as the one-pilot issue and the desired maximum speed. Is that being resolved? Are you close to a top speed requirement of 170 knots, for instance?

A. Let me start back a bit. The requirements process, as practiced by the Army, is a threat-driven process. So it starts down in the school house in Ft. Rucker [Ala.]. They write down the threat, as perceived by the helicopter world. The way the Aviation School does it, that threat is always going to be the maximum attack helicopter threat. But the school is not equipped to handle development methodology in addition to the threat-related things.

As a consequence, requirements generally show up—it's not just helicopters, it's guns, missiles, tanks, everything else —trying to obtain a program to produce something that counters that entire threat. Those who are adherents of that methodology think anything that falls short of fulfilling all the dimensions of the threat profile is an inadequate thing. But that threat document method will not get you a consolidated program.

So part of the commotion—and there has been commotion—is related to trying to work around that to introduce this other dimension that I'm talking about at length, because those dimensions are not regarded as threats. The methodology is perhaps suitable for first-line fighter aircraft, or the main battle tank, and the like, but it's not entirely suitable for entire fleets of things. Part of the [difficulty] has been what I would regard as a kind of "white scarf" [outlook].

You've got a system that is basically populated with people who have been selected and advanced in rank because they're proficient at attack and command —things generally favor the "fighter" side of the equation. So it's not surprising that they're for [higher speeds]. And I don't mean this disrespectfully. You've got a first-line fighting aircraft, and we undoubtedly will have a successor to that. The thesis here has been: "See if you can make one that is pretty good." Indeed, if it turns out the way it is on paper, it will be practically the same as —with somewhat lighter ordnance loads —the AH-64. So we haven't fallen short, but we also haven't solved the utmost [requirement of] 20 years from now. My own feeling is that we don't yet know enough about what that should be, at least to drive this program.

Q. What were some of the arguments in favor of a higher top speed? Wasn't something on the order of 250 knots or more being discussed at one time?

A. They cast up a set of profiles in which speed becomes an important parameter because of possibly traveling long distances from the assembly point to the battle. Now, we can do that sort of thing, but most of the scenario is in Europe.

In the European arena and in Korea, you simply don't have that kind of long

legs. So the dispute has been whether we should design an airplane for the longest legs at high altitudes and high temperatures, or whether we should tone it down a bit and solve the more extreme problems in the Middle East with, for instance, JVXs [the joint-service vertical-lift transport aircraft development]. But to try to design it for all purposes, we get back into the original JVX problem, which was too many different kinds of requirements driving a single airplane.

The decision [on the top speed requirement] was actually made a long time ago. It's been confirmed by a session we had here with General Wickham [Gen. John A. Wickham Jr., Army chief of staff] not too long ago. If anything, we probably allowed more study and argument about this than we should have, but the decision hasn't changed. Support for the decision is probably not a hundred percent by quite a bit. Because you're essentially plowing doctrinal matters and long-held positions.

If you accept a kind of consensus, though, you will never strike for those more ambitious objectives, but will settle for some kind of averaging result. So I think it's not improper at all to set more drastic objectives and see if we can't get there. I think it also is a better route with which to try to get a technological advantage over Russia. Simply say, "Here's the Russian threat, now see if we can't catch up to it."

Our own process is so slow that we're in trouble from the beginning. I think we need more vision. There's a general lack of risk taking. A surprising thing is that the pressures are all in the direction of not embarking on projects that have measurable, attackable risks. You do that at the beginning of an engineering development program and you put yourself in the position of technological obsolescence before you start.

Q. It seems that with some of the capabilities we're talking about—trying to get away from the traditional roles of scout and utility, sensors, avionics—you're making the pilot almost a one-man firing team. Does that seem to be part of the problem?

A. When the LHX program was first started up, there were three [types]: an attack, a scout and a utility version. The scout and the attack versions have been coalesced, but that in a sense is nomenclature, because you'll almost surely [be able to] change the mission package from a scout-like function to an attack function. I don't think that will be completely perceived until you start laying out the actual aircraft and the detailed mission package.

As you probably know, there has been a grand battle going on here over the role of AHIP versions [working with] AH-1s and AH-64s, focused on the ratios of scout and attack helicopters within units. The extremists on one side say, "Go all attack helicopters." On the other side, they say about 50-50. That's not a settled—probably never will be a fully settled—issue.

The issue is simplified if you can field convert one to the other as the circumstances dictate what you need. So I think that it's probably the proper course to follow, to leave them together, rather than trying to differentiate.

Q. What is the preponderance of opinion on the one-pilot idea?

A. Roughly speaking, there are three who are in favor, and 28,742 against.

Q. Do you have any idea how it's going to turn out?

A. Well, if the three are Wickham, Thurman [Gen. Maxwell Thurman, Army vice chief of staff] and myself, it's going to turn out with one pilot. The rest of the world has got a ways to move. Again, what we have told them is to go see if it can work out. If it can't, we're not going to persist in it. But the very effort to try to make it work has led to a great deal more insight into the functions, the work-load "drivers" that have to be performed, especially the "peaking" requirements. Most of that insight will be turned into automation and computer-aided things.

Even if you had two in the crew, I think the kinds of maneuvering and weapons use, target acquisition—all those things are going to become more and more crucial, and the time shorter and shorter on the battlefield.

So, we'll need those things in any event, because I don't believe we can transfer technically from one crew member to another in the kind of battlefield environment we're talking about. It's primarily the psychology of target acquisition and handover and the lack of experience with the level of automation. Technically we don't have a grasp of those things and pilots are not psychologically prepared for it. It's like the switch to computers: it won't become fully comfortable until you get a generation who have grown up that way.

Q. How do the various potential configurations for the LHX airframe relate to the debate about performance requirements?

A. I talked about these mission profiles [and this] is also an issue for technologists, because they see a convertible plane, a tilt-rotor sort of thing—that's not the only way to do it, but it's the one that's prevalent—as getting them up another 20 or 30 knots beyond the present [speed levels]. That's important for long-distance flight, but nobody is going to fly at 170 knots, let alone 240 knots NOE [nap-of-the-earth]—not for very long. The conversion time of these [tilt-rotor aircraft, from vertical to forward flight] is a matter of 5 to 10 seconds, so in terms of escape from a hovering [position] the tilt-rotor doesn't offer any real advantage.

The way we put it, we will not accept anything *less* than 170 knots, but we fully expect the technology to exist in what are referred to—strangely—as "plain vanilla" helicopters. It's pretty clear you should get up to 185 to 190 for short bursts and you could probably do even more. With the Blackhawk, that's now the normal flight speed. I've actually flown downhill in a Blackhawk at 200, but not sustained.

As a "plain vanilla" helicopter, I point out that it [LHX] is as much a step up from the Apache as the Apache was from the Cobra in terms of increments of speed. We have some experience, but as we make these steps we've got to watch the training pretty carefully.

We have to get a hotter machine in the field and use it properly or we get into trouble. So I don't consider [that] a single-pilot, highly automated, 170-, 180-knot machine of the ilk we're talking about—with all the other ambitions we have for it—could be characterized [as] "plain vanilla" conventional.

In fact, I think the technology of the tilt-rotor is as "plain vanilla" as conventional and, in any event, will be reduced to practice well enough with the JVX plane. So, I don't see that there would be any point at all in choosing such a route just because of the psychological difference from what you have been doing.

Q. You're talking about considerably more size and weight in the tilt-rotor configuration, in any case, aren't you?

A. If you try to hold a mission payload constant, I think you're looking at premiums of 10 to 15 percent. The protagonists will say 10 and the antagonists will say 20, so 15 is probably about right

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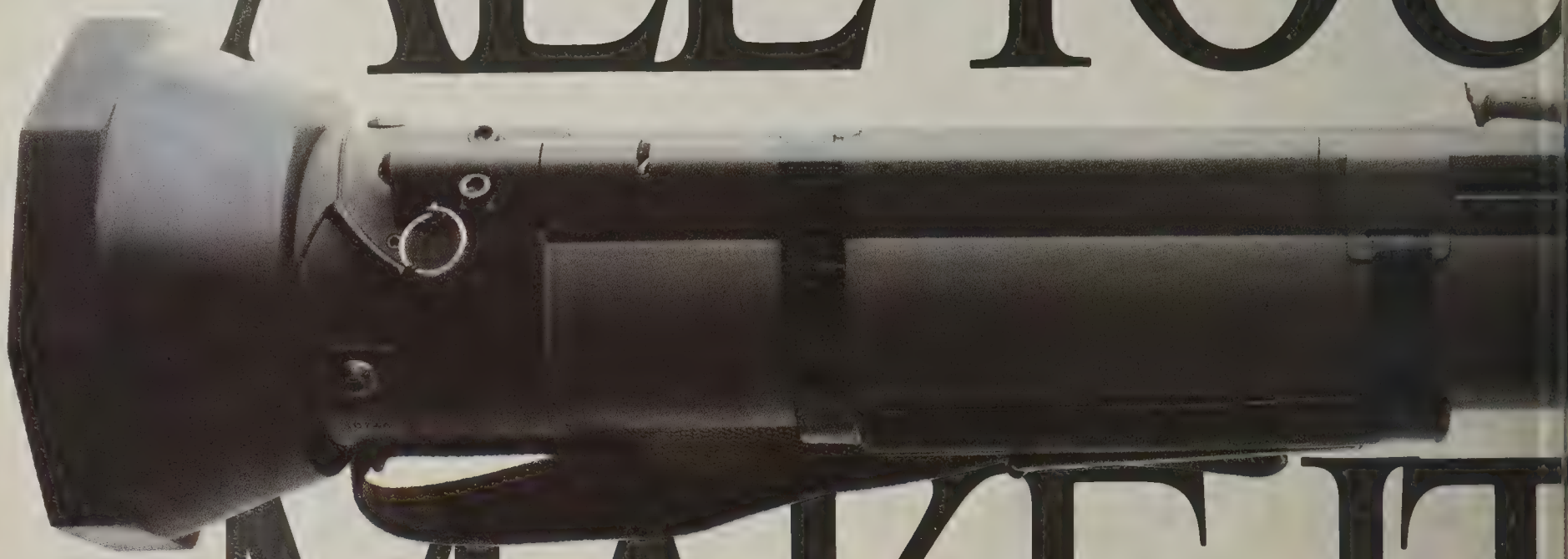
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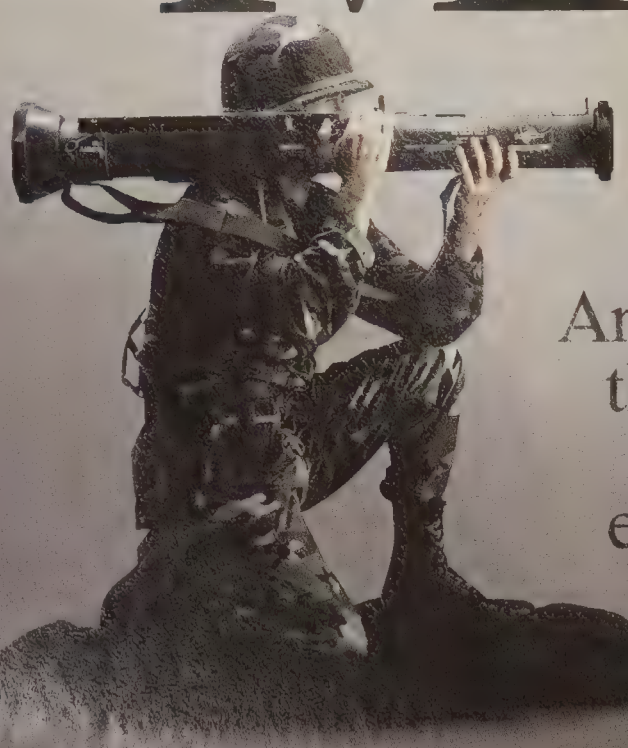
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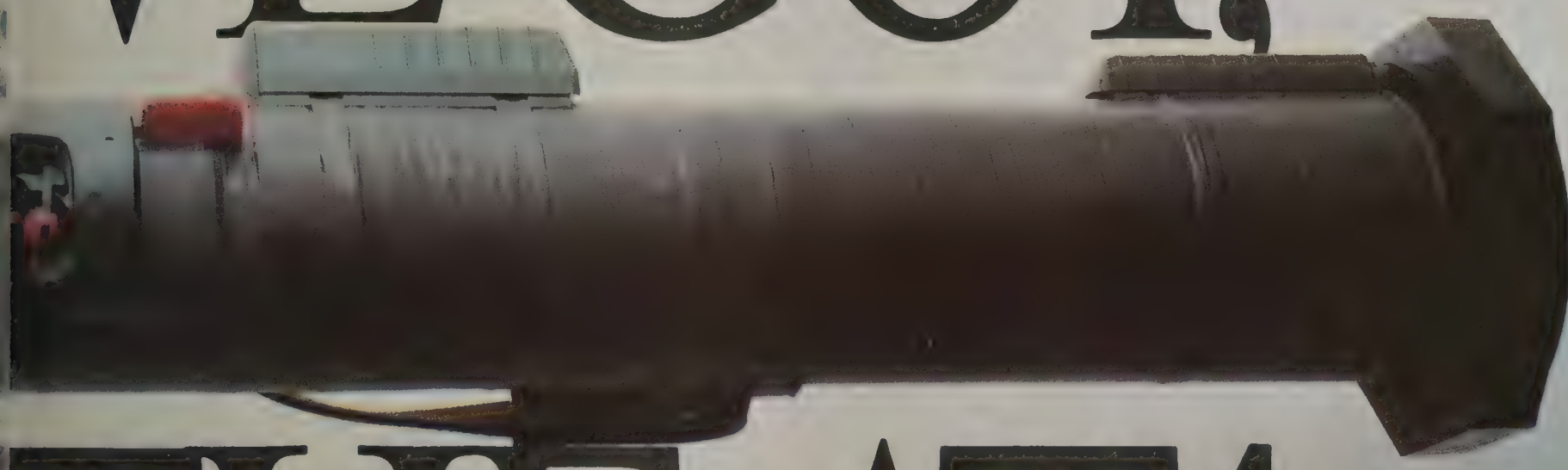
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Artist's impression of the Bell-Boeing MV–2A Osprey JVX (joint-service, vertical-lift, experimental) now being developed by the Navy, primarily for the Marine Corps. The Osprey's tilt-rotor configuration is no longer a candidate for LHX as presently defined, but the Army may consider the craft for long-range, high-speed missions outside of Europe and Korea.

It's of that order; it's not twice or 50 percent [more].

Q. It seems that a great deal of this very high technology is going in to compensate for the one pilot. I'm sure this will be a question that Congress will probably ask: if you put another crew member in, do you need all this?

A. The answer to that is quite clearly "Yes," because of the hand-off problem. The problems of handing off in nap-of-the-earth, high-G maneuvers, target acquisition, weapons firing, the high peak work loads—the interval is too short, and the amount of things that have to be done is too high to get it from one person to another.

The Air Force has come to understand that. I guess they've been driven to work down to one pilot just to get the performance level, and they've done the high levels of automation.

The Navy has done it to some extent with its LAMPS-type [light airborne multipurpose system] helicopters, so we've got more proof. I think the evidence is quite clear—and I've asked every contractor this question myself, and they say the same thing—that you're going to need the automation anyway, as long as you stick with the performance parameters that we've talked about.

If you've got it anyway, then there are only minor differences that the second fellow contributes, other than the psychological one of somebody to talk to, somebody to take over if you're disabled. But the disability [question], in the attack mode, might be better served by putting the two of them up in separate airplanes. There hasn't been a lot of study on that, but I think it's rather obvious.

Q. The question arises then: why have two crew members in the Apache when you really have something that's a generation ahead of our first-line attack helicopter?

A. Well, that's the idea. This thing will not show up in usable quantities until the mid- to late 1990s. That's 30 years after the Apache was invented. The Apache is coming into service after a lengthy process that goes back to [the AH-56A] Cheyenne and maybe even before that. So as a concept, it's already fairly old. And I wouldn't think it at all prudent to rest on the Blackhawk–Apache technologies as something we can count on 20 and 25 years from now. That isn't to say they're not good birds for their period, but they were criticized—and I think correctly so—for taking much too long to evolve the next generation. As a consequence, we wind up keeping things around too long and spending too much money bringing them up to speed. Just agonizing over whether to convert Cobras to a night-fighting capability surely overlapped the entire period of development of the Apache, and the program commitment to do some of that was just made last year.

We'd be better off moving at a much faster clip. One of the reasons for trying to force the margin in this program is to give them breathing room so they can introduce [new features later] without being so nearly up against the stops that it becomes a very expensive program. Then it's hard to get the money and ingredients to fix up the old things. Whereas if you've got some hundreds of pounds of extra payload capability, you can probably figure out how to get in whatever—a sight, computer or weapon.

Q. In working with the helicopter industry, what kind of a feel do you get for the feasibility of some of the high-risk aspects of LHX technology?

A. I believe that they are on sound ground when they say they think they know how to do these things, and that the answers will come somewhere near the objective. You can discount some of that as the inevitable optimism of marketing, but I haven't found any logical credibility gaps of any real consequence. And we have had other people look at this, not just the participants.

Q. Cooperation between the Army and industry has been good?

A. Yes. I think it [the program structure] has been a good way to go. The industry is limited by who the players are. IBM is the least typical industry member, but they have the LAMPS program, so they are not any longer a participant. They all of course watch each other like hawks for insight into what each is advocating and what progress they're making.

The openness and the interchange between the Army and these contractor chains has been very thorough and beneficial. Regardless of the programmatic outcome, we've learned a lot in a short time. We've gotten confirmation by more than one [company] doing it and, on the scale of a program like LHX, the cost is really not too high.

I think, in fact, it's a much better way to proceed than to go through a paper determination to have a new aircraft and then a paper competition to decide who gets to do it. All of this is usually done in a fairly short period of time, but by stretching it out, I think we've learned a good deal that we can now use to avoid some of the hiccups that seemed to beset these programs.

Q. In the earlier days of the program, there was quite a lot of discussion about the development of a new suite of weapons, something that would be radically different, radically more effective, and would only weigh 400 pounds. Is that still in prospect?

A. No. I stipulated as a price for getting going on the LHX: *no new weapons*. I just didn't think we could afford both, and I could see the two getting intertwined and asynchronous and one would block the other from proceeding. And most importantly, I don't think we yet have a clear idea of what the "new weapon" should be. I think we're a long distance—maybe a few years—from understanding air-to-air combat, air defense against tactics and weapons, air-to-air machines, things of that sort, so I think that's a whole program [in itself].

If at some point there seems to be an indicated weapons development, then the [gross weight] margin that I've been talking about—unless we've used it all up on something else—should take some of the pressure off of the super-miniaturization of the weapon. It's a fairly costly process, trying to get more bang for less weight. I think and hope that this approach makes the development cost of such a weapon less of a problem.

Also, in getting the automation that is clearly required for this [program] there is surely enough computer [capacity] in there that you could, almost with the back of your hand, run the fire control system. So again there may be a built-in lessening of cost.

Q. Some of the figures I've seen indicate that if you're going to replace that older, lower end of the helicopter fleet between 1995 and the year 2005, you're really talking about production rates somewhere in the neighborhood of 30 to 40 aircraft a month. You're now building what, ten Blackhawks, and 12 is the desired figure for the Apache? In other words, you're talking about considerably higher rates, something like what was approached during the Vietnam war. Are Congress and the public going to accept that kind of effort?

A. First of all, it would undoubtedly be the only major program for much of that interval, and we expect to have two producers.

One of the competitive aspects of this will be a team to go through the development, and the team will [then] break apart and stay in competition throughout. That pair will be facilitated for something like 60 to 65 percent of the total requirement.

Then it will be one of these win-lose things where the winner gets more and the loser less. The details of that have not been worked out. But I don't think there's that much difference in production rates because, for one thing, this will be an all-composite airframe, and that will be a matter of setting gluing sheets and forms and things like that, rather than running some riveting lines with sheet metal, hogging out, and things of that sort. So I don't really think that the airframe production is that big a deal.

The computer and avionics will be very highly integrated. They'll use those dense VHSIC-type circuits [very high-speed integrated circuits] and the production rates of 30 a month are pretty apt to be well within the capacity of the industry. So I don't see any reason to be uneasy about production rates.

Q. What kind of a priority do you see being given to LHX over the next few years? Very high?

A. Oh, it's quite high, in the Army.

'Incoming?'

Vietnam veterans will recall that latrine waste was disposed of by collecting it in cut-off oil drums, dousing it with diesel fuel and burning it. Sometimes this procedure was carried out precariously close to the latrine.

One day, while I was working in an aircraft hangar, I was jolted by the sound of an explosion in the direction of a nearby latrine. I looked outside just in time to see a cloud of black smoke billowing above a flattened waste barrel and hunks of burning debris flying through the air. It was immediately obvious to me that someone had dropped some ammunition or an explosive device into the barrel, and it had exploded amid the burning waste.

The lone occupant of the latrine, only a few feet from the barrel, had not come to the same conclusion. Mistaking the explosion for an enemy mortar attack, he headed for the nearest bunker.

The last time he was seen that day, he was running out of the latrine, pulling up his pants with one hand, holding his hat on his head with the other and yelling frantically: "Incoming! Incoming!" which was the standard warning that we were under a mortar or rocket attack.

Our commander was pleased that the soldier was not injured during the incident, for it would have been difficult to write a dignified letter of condolence to the soldier's family back home.

MAJ. JERRY D. RODGERS

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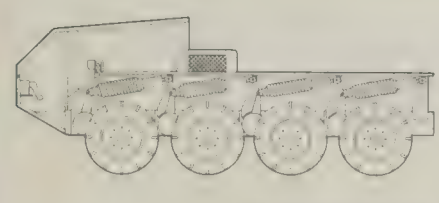


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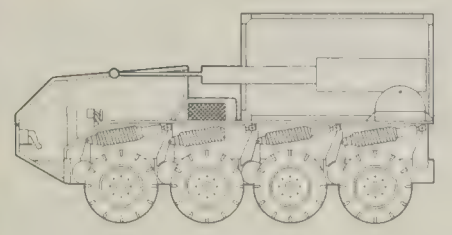
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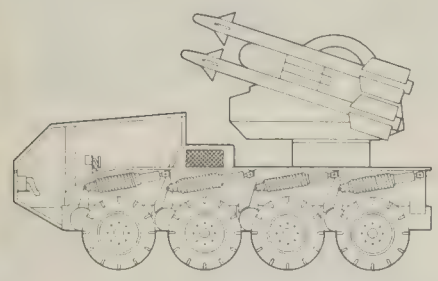
Existing applications of the Standard Tactical Vehicle currently under development or in production.



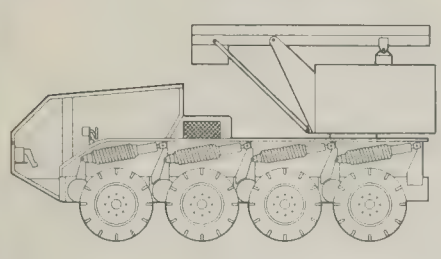
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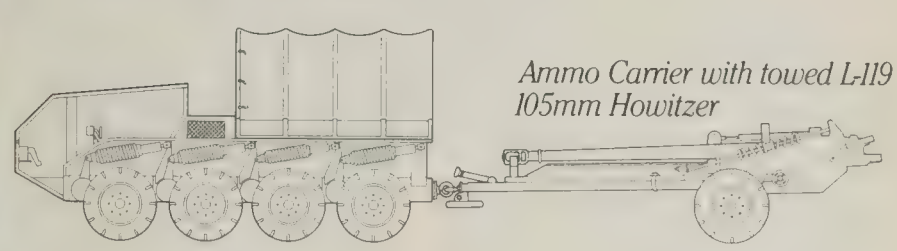
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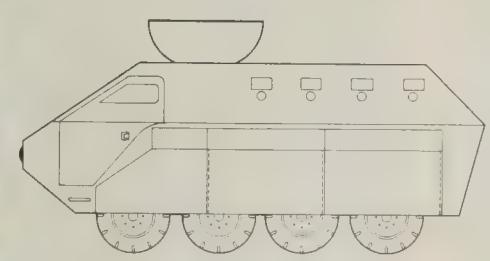
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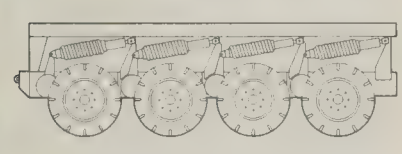
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Schofield's Soldiers For a Day

By S. H. Jacquelin

Thanks to the 25th Infantry Division, some Hawaiian youngsters got a first-hand introduction to the Army and division soldiers made new friends.



"I can hear it! It's coming! It must be close! Where is it? *There* it is: it's flying up the hill toward us!"

The "it" was a UH-1H helicopter, and the muted thumping of its rotors had reached the excited Cub Scouts almost a minute before they sighted it. The helicopter sneaked up on them from below, executing some fancy contour flying through the wooded valleys of the low Waianae mountain range in Hawaii.

The boys were gathered on a green hilltop overlooking the Pacific Ocean on the island of Oahu. Over a four-day period more than 1,550 Cub Scouts, leaders and parents were the special guests of the 25th Infantry Division Air Assault School at the Army's Schofield Barracks.

The approach of the helicopter began a series of demonstrations, exhibits and realistic instruction on the equipment of the Air Assault School's training field.

Schofield Cub Scout Days have been held annually for almost ten years as part of an active community rela-

onship between the Army and the Boy couts of America (BSA) organization in lawaii. Popular events such as summer nd weekend camps on the base, trail ikes on the island and statewide scout ecruiting drives are coordinated between ne Army's scouting liaison office and ne Aloha Council, BSA's headquarters or all scouting activities throughout the acific region.

Such positive involvement with young-ers has greatly enhanced the military's nage with their civilian neighbors in the land state.

The Army dedicated several months' reparation, almost a hundred participat-ng and behind-the-scenes personnel, and ne Air Assault School's trained instruc-ors and special equipment to this unique ub Scout event. Maj. Gen. Claude M. icklighter, the division commander, per-onally hosted the crowds of climbing, ughing, inquisitive little boys, and he nd the soldiers from ten units, compa-ies and battalions provided a meaning-ul introduction to the excitement as well s the hard physical work of this very pecial training.

From 9 A.M. to 4 P.M., the boys pre-ended they were soldiers for the day s they were escorted in groups to five ifferent instruction stations et up in the cool forest of ne East Range.

They learned some rappel-ng skills, struggled through ne rope and bridge crossing ests, participated in first aid nd survival practice, exam-ned several kinds of combat rtillery vehicles and watched n "authentic" laser rifle attle.

During the first demonstra-on, the combat aviation bat-alion's huge chopper hov-red in the air at an altitude f 50 feet as four long, thick ropes were urled out of the open doors. When the nds of the ropes almost reached the round, four air assault instructors seemed o fling themselves out of the helicopter nto the empty air to follow. The boys houted when they realized that the men were tied to their own ropes with special arnesses and cheered as the soldiers slid afely down to the ground.

The men of an air assault group are rained to be the first ones into a combat one that is too remote or rugged to be asily reached by foot soldiers or heavy ehicles.

They and their bulky packs and equip-



Photos above and below by S. H. Jacquelin



Cubs line up (above) *for a look at a UH–1H helicopter at the division's air assault school, and get a briefing* (left) *on artillery fire control gear.*



Photo above by S. H. Jacquelin



Photos above and below by Mark Merriam



A Cub tests his footing (above) *on the tricky single-rope bridge, while a division air-defense soldier* (above, left) *shows another Scout how to operate the turret of the 20-mm Vulcan gun.* Left, an air assault school training instructor helps a Cub adjust his rappelling safety harness.

ment are often flown in by helicopters or lowered over the sides of steep cliffs, so rappelling in a variety of hazardous situations is a skill they must all master.

The instructors also displayed their rappelling procedures for the boys on the 34-foot-high tower at the rappelling station. The tall wooden training structures were set in the forest, a site more peaceful than the helicopter's windswept meadow, but the demonstration was no less dramatic.

As the boys watched the men hurl themselves off the tower, they learned the value of safety equipment and training, as well as trust in the teamwork of the spotters and helpers ready to assist their buddies at the first sign of a miscalculated jump.

While the Cubs did not jump out of the helicopter or off the tower, they did have a chance to practice rappelling techniques for themselves on a low 45-degree ramp. Although the soldiers had perfected their own skills until they were second nature, the young men eagerly helped the boys learn simple basics such as snapping the safety clips on their harnesses.

The boys responded with their own eagerness, and a mutual admiration began that grew throughout the day. Most of the soldiers were far from home, and though they were stationed in the "Paradise of the Pacific," they had all learned that the breathtaking beauty of Hawaii, the local culture's gentle atmosphere and even the famous pleasures of Waikiki could not dispel the loneliness of being so distant from their loved ones. The clamoring Cub Scouts came to represent their own brothers and sisters and, in some cases, sons and daughters.

Throughout the excitement of the activities, very special attachments were formed—the unique but, at first glance, unlikely warm friendships of young men and young boys.

When asked if the soldiers involved in Schofield Cub Scout Days were truly volunteers or had "been volunteered" to herd the groups around for the eight-hour days, 1st Sgt. V. Eddleman, school commandant, quickly responded, "Oh, no. So many men want to volunteer for this event each year that I have to make sure that the roster rotates and everyone gets a turn. They love it!"

The rappelling tower was about the only piece of training equipment that the Cubs did not get to try for themselves. Under the careful supervision of instructors and their trained assistants, the boys tested their physical skills at the rope and bridge crossing station. The soldiers use these woven ropes slung five feet above the ground between towering eucalyptus trees for their training in crossing otherwise impassable rivers and gorges.

The climbing equipment was not modified for the boys, so they got some very real insights into the men's challenges—like clinging upside down by their arms and legs to a swaying rope with a seven-pound rubberized (dummy) M16 rifle dangling from their backs.

Of course, the Cub Scouts got a little more help than the soldiers usually get, as there were two men with each boy, attaching their hanging harnesses and ready to support them if they slipped.

However, the instructors made the crossing seem real by shouting, "Okay men, you're hanging over the middle of a raging river a hundred feet below. Look out now—the enemy has spotted you and is opening fire! Oh, no! The wind is starting to blow your rope around! Hurry up, soldier!" Most of the Cubs made it from one end to the other, but they realized that the feat was not as easy as it had looked at the beginning. Respect for their new friends' physical prowess was building.

The Cub Scouts learned some new first-aid procedures and practiced some familiar routines with enthusiastic instructors from the division medical company. Simulated broken bones bound in real splints and "blood"-soaked bandages, "choking" victims who giggled as they were guinea pigs for the Heimlich maneuver and boys "fainting" from sunstroke made for vivid demonstrations of life-saving techniques.

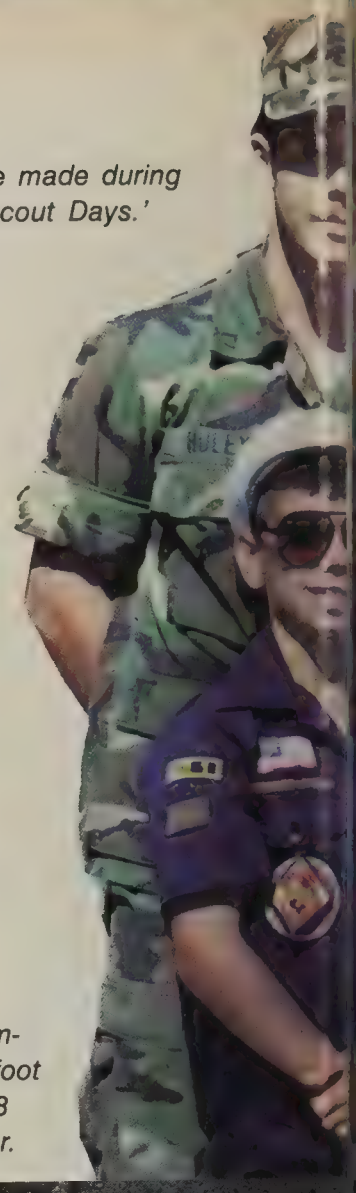
The medics also showed the Cubs some fascinating survival secrets. A plastic-covered hole in the ground yielded its precious water from nighttime condensation. By measuring a shadow's movement around an upright stick, the boys found North without a compass. The friendly medics carefully encouraged each boy to understand some basic survival information, in the universal hopes of all first-aid instructors that they may help save a child's life some day.

A true taste of Army life was served to the Scouts at lunchtime. You know, C-rations have not improved much over the years. Comments of "Yuck, mine looks like dog food" and "Anybody want to trade?" or "Toilet paper!?!" drifted through the forest, echoing hungry soldiers' conversations for almost 40 years.

More popular than the mess area, the equipment display station gave the Cubs the chance to learn about various pieces of heavy artillery and armored personnel carriers. They listened to lectures and climbed up, over and inside the machinery. While not a part of the air assault group, the field and air defense artillery can provide support by zeroing in on targets up to 15 miles away.

Noncommissioned officers from the 1st Battalion, 62nd Air Defense Artillery told about the uses and missions of the guns and vehicles and explained detailed charts about how they operate. The soldiers who man the equipment in the field let the boys climb inside the large veh

New friends were made during 'Schofield Cub Scout Days.'



Cub Scouts clamber over the 40-foot tube of an M198 155-mm howitzer.



S. H. JACQUELIN is a free-lance writer from Honolulu, Hawaii.





Left, *Cubs also sampled Army combat rations; reviews were mixed.*

Air assault school instructors (below) *help a Cub get a proper grip on a swaying rope bridge.* At right, below, *is one of the Scouts who got a chance to sit in the gunner's seat of the M163 Vulcan gun.*



es and pretend they were steering them · turning the turrets. The "soldiers for e day" let their imaginations run wild , they aimed gleaming Chaparral mis- les and sighted the long barrel of a 155- m howitzer.

An indispensable piece of equipment r air assault is the helicopter, and after e Huey finished the first exciting rap- elling demonstration, it landed for the oys to examine. The pilot and copilot dulgently fielded the many questions red at them, especially the "AirWolf"- spired challenges, such as, "Where are our turbo-thrusters and computer-gen- ated infrared scanner radar?" Or "Can ou use starburst rockets after you break lach-1?"

Science fact, not science fiction, was dramatically demonstrated in a mock-combat skirmish. Fifteen soldiers did battle with rifles fitted with MILES (multiple integrated laser engagement system) devices. The rifles are loaded with blank cartridges and activate a laser beam when fired. Each man wore a special target/receiver on his chest which emitted a loud electronic beep if hit by a laser beam. The noise would not stop until the "scorekeeper" turned off the unit with a special key, so each side would know exactly how many hits they had made.

These soldiers from the 2nd Battalion, 11th Field Artillery, wore full camouflage gear, with blackened faces and brown twigs attached to their helmets.

As the soldiers soundlessly darted through the thick grass, the watching Cubs learned how difficult it can be to spot the enemy. The disguised presence of the hidden men, as well as the loud noises of the blanks, screeching beepers and the men's tense shouts, all contributed to create the chaos of combat which involved the boys more than television war movies ever could.

After the laughing fun of all the rope climbing they did, the new facts they learned and the fascinating machinery they examined, this small yet dramatic display of battle gave the Cub Scouts their truest idea of the very reason for the existence of such Army units as the 25th Infantry Division Air Assault School. Schofield Cub Scout Days were very good days for the Cubs of Hawaii *and* for their new-found friends.

STAND OR



There would be many twists and turns in the Korean War, but never was the issue so fundamentally in doubt as in the desperate fighting in August and September 1950, when United Nations forces ran out of space and time.

DIE



By John Hoyt Williams

Premier Kim Il Sung unleashed his North Korean People's Army (NKPA) on 25 June, 1950, confident that American-sponsored South Korea would fall in a matter of weeks, unsupported by American military might. He and his Soviet mentors (and suppliers) knew that the American public and its responsive Congress were relying on nuclear weapons to deter—or win—the next war, and that the demobilized United States was woefully unprepared to fight a conventional war, especially in distant Asia. Kim Il Sung was largely correct in his assessment.

The United States in 1950 had a massive (411,000-person) Air Force and a huge (377,000) Navy, but a skeletal (591,000) Army to handle global responsibilities and a dispersed and weak (75,000) Marine Corps incapable of forming two complete divisions and two air wings.

The U.S. Army retained but ten divisions, nine of which were seriously understrength (by as much as 50 percent). Almost half this force constituted Gen. Douglas MacArthur's Eighth Army, doing "soft" occupation duty in Japan: the 1st Cavalry (actually, infantry), the 7th, 24th and 25th Infantry Divisions on the main islands, and the 29th Infantry Regiment on Okinawa.

All of these units were short of manpower and heavy weapons, with regiments consisting of two rather than three battalions and artillery battalions reduced similarly from three to two batteries. Even then, the battalions and batteries were not at full strength, and none had its full complement of weapons. There were virtually no tanks in the Eighth Army, almost no 105-mm armor-piercing ammunition, none of the tank-busting 3.5-inch bazookas and a dearth of mortars, heavy machine guns and recoilless rifles.

Complicating matters, the Far Eastern Air Force (FEAF) was neither designed nor trained for close ground support, and the "fleet" under Gen. MacArthur's command consisted of precisely five combat vessels. Completing this dismal scenario is the fact that garrison duty in Japan was "pleasant," hardly suited to honing combat troops to a sharp edge. Kim Il Sung knew all this and more before he moved south.

Ordered to conquer all South Korea before 15 August, the NKPA crashed into the Republic of Korea (ROK) Army with all its 135,000 men: eight divisions, two demidivisions, two detached regiments, a tank brigade with 120 new Soviet T-34s, five border guard brigades and 180 combat aircraft. Fully armed by Moscow, the NKPA was a tough, fanatical fighting force, most of whose officers and many of whose men were veterans of the Chinese communist eighth route army, victors of the 1940–1949 Manchurian campaigns.

Facing this buzzsaw was the lightly armed ROK Army, actually a constabulary with no Navy or Air Force, no tanks and only 89 fieldpieces. Short on arms but long on determination, the ROKs bled the advancing NKPA severely, but could not halt it. In a few days, great chunks of their nation fell to the communists.

Gen. MacArthur, authorized by President Harry S Truman and the United Nations to unleash FEAF and soon his ground forces, found himself in a nasty race. Unprepared for this kind of war, the Eighth Army had to be fed piecemeal into Korea to gain precious time by slowing down the NKPA. Maj. Gen. William F. Dean's 24th Division gradually entered combat beginning 5 July, each battalion and regiment slowing the enemy but be-

ing itself savaged, especially by the T-34s, impervious to the GIs' light weapons.

By 11 July, Gen. Dean at last had all three regiments to command, but his 21st and 34th were badly mauled. The 19th, the last to arrive, was soon flanked, surrounded on 14 July, and almost destroyed. Gen. Dean's division was forced to fight a fragmented retreat against an enemy who flowed like water around its many flanks.

The 24th was pushed back over 100 miles in 17 days, losing more than 30 percent of its men (including Gen. Dean, captured in combat) and almost all of its original equipment (renewed by air supply).

However grim, the sacrifice of the 24th Division ruined Kim Il Sung's timetable and bought Gen. MacArthur the time he needed. While the 24th was slowing Premier Kim's legions, the 1st Cavalry and 25th were debarking in Korea, almost at full strength thanks to the 7th Division, which was cannibalized down to its bare bones. Frantic airlifts from the United States of 3.5-inch bazookas and 105-mm HEAT (high-explosive antitank) ammunition boosted morale.

Lt. Gen. Walton H. Walker, field commander of the Eighth Army, knew that if he could hold out a few weeks more he would receive the 29th Regiment from Okinawa, the 5th Regimental Combat Team from Hawaii, the 2nd Infantry Division and 1st Provisional Marine Brigade from the United States and the British 27th Infantry Brigade from Hong Kong. Further, he had been promised modernized Sherman and superb Pershing M26 tanks to counter the dreaded T-34s, and he was cheered to witness more and better air support, with several carriers soon to augment it.

All this would turn the tide *if* the Eighth Army and its shattered ROK allies could hold onto some Korean soil.

Under enormous pressure, Gen. Walker's Eighth Army backtracked to the peninsula's southeast, unable to create a continuous defensive line. Without such a line, NKPA units seeped like quicksilver through and around American and ROK battalions, usually at night. There was no "rear" in this war—cooks, drivers and artillerymen were as vulnerable as anyone. Each dawn brought ambushes, raids and roadblocks by the omnipresent NKPA.



THE PUSAN PERIMETER
AUG. 1-SEPT. 15, 1950

The Eighth Army and the reeling ROKs retreated, but they did not panic. Gen. Walker, meeting each day's crises with the last of his pitiful reserves, showed phenomenally good timing and steady nerves. Continually forced to gamble, he minimized his losses and maximized his time.

In retreat, the Eighth Army was hardly passive: it took savage bites out of the enemy, who, under increasing air attack, was forced to move, mass and attack by night.

By the last week of July, as the 29th Regiment came ashore at Pusan, the major southeastern port, three-quarters of South Korea was in communist hands.

The situation had passed from grim to funereal. Gen. MacArthur was begging for the 82nd Airborne Division—virtua ly the entire American strategic reserve President Truman was authorized to ca up reserves and four National Guard d visions. The Eighth Army's casualtie surpassed the 6,000 mark, while RO losses reached a staggering 70,000.

The NKPA, however, was also humar and in the last days of July had to catc its own breath. It had lost perhaps 50,0 of its best men and most of its tanks an was desperately short of all supplie Food, ammunition, medicine and othe necessaries were either delayed or d stroyed by FEAF on the long route to th front. Even the stoic, peasant-tough me of the NKPA were stretched to their lin its.

Gen. Walker was fast running out space. The Eighth Army would soon hav to make a stand. On 26 July, he decide

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JOHN HOYT WILLIAMS, Ph.D., is a professor of military history at Indiana State University, Terre Haute, Ind. He has written extensively on military history and international affairs.

dig in behind the only geographical arriers available: a 140-mile line formed y the Naktong (and Nam) Rivers and a ıain of rugged mountains in the north. fair defensive barrier, the Naktong ine, or Pusan Perimeter, would protect ucial Pusan and give the Americans ıd ROKs a luxury so far denied them— fixed, continuous (if porous) defensive osition. There, believed the American eneral, his forces could regroup, entrench ıd bring their superior organic (and air-orne) firepower to bear against the com-aratively lightly armed enemy.

Gen. Walker, however, was aware that his mens' backs would be less than 50 miles from the sea nd that his regiments would be spread ıin as Cosmoline on the scorched Korean ills. Although badly hurt, the NKPA ould mass superior force at any point(s) f the line. If the Perimeter broke, there as nowhere to retreat to; the Eighth rmy would be slaughtered before it ould be evacuated.

On 1 August, the last of Gen. Walk-r's men were across the shallow, 200-ard-wide (on average) Naktong River, nd the few existing bridges were blown. lis units held the hills along the river,



General of the Army Douglas MacArthur (left), *commander in chief of all United Nations forces in Korea, urgently sought more troops in the opening months of the conflict.*

Below, *Maj. Gen. William F. Dean, whose 24th Infantry Division was the first U.S. unit to face North Korean forces in July 1950, addresses a group of South Korean and American officials in 1948.*





eated in a jeep on the way to the 24th Infantry Division command post in outh Korea in August 1950 are (from left): *Army Chief of Staff Gen. J. awton Collins; Lt. Gen. Walton H. Walker, Eighth Army commander; and Maj. ien. John H. Church, who became commanding general of the 24th Division fter the capture of Maj. Gen. William F. Dean.*



North Korean Premier Kim Il Sung (right) *ordered his North Korean People's Army across the 38th Parallel and established 15 August, 1950, as his deadline for conquering all of South Korea.*

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registering their machine guns, mortars and artillery on all potential fords and on the valleys, cuts and gullies between their hills. By force of circumstance, the 43-day (mostly night) Battle of the Naktong Line, or Pusan Perimeter, would be a fight of companies and battalions, a swirling kaleidoscope whose pieces were connected only in Gen. Walker's mind.

Statistics are misleading. By 1 August, friendly forces (by now called UN forces) outnumbered the enemy by one and a half to one and outgunned it by a great deal more. However, in the NKPA, virtually every man was a line soldier, whereas it took as many as eight men to keep each American soldier in his foxhole.

Gen. Walker acknowledged that the NKPA would get across the Naktong River almost anywhere they chose to make a major effort, but he determined that such crossings would cost the enemy dearly. He ordered that immediate counterattacks would be made by any unit—no matter how weak—whose sector was penetrated. The grim determination of men who fought to survive would have to match the still optimistic fanaticism of the "invincible" NKPA. Battalion and regimental commanders were told that they could not count on the Eighth Army's minuscule and decimated reserves.

They would, in almost all cases, have to expel the enemy with what they could muster at the time. The Naktong Perimeter was essentially a chain of Ft. Apaches, and the 7th Cavalry was not available.

The first few, hellishly hot days of August were marked by cautious NKPA probes and scattered combat, but far more Americans were felled by dysentery and heat stroke than by the enemy.

The NKPA, digging in while dodging showers of dreaded napalm and bombs, was busier than UN intelligence realized. In what ranks as a major military miracle, the NKPA was receiving new T-34s (the T-34/85, a 32-ton tank with an 85-mm gun).

Despite the destruction of transportation facilities and routes, supplies continued to reach the front. Most came on H-frames strapped to the backs of tens of thousands of rugged peasants (many of whom were impressed South Koreans), who padded quietly and undetected cross-country with up to 200 pounds of supplies—a chain of human mules. For the most part living off the land, NKPA troops could and did exist for weeks on a ration of three sticky rice balls a day. Food was not among the items carried on the H-frames.

Marshal Choe Yong Gun, commanding the NKPA in the field, doled out his incoming supplies and reorganized his forces, fleshing out each division with new recruits from the North and with thousands of Southerners dragooned unwillingly into uniform. At night, quietly and unsuspected, naked North Koreans labored in the shallow Naktong, often within a few hundred yards of a UN hill position. In two or three feet of muddy water they were building a series of "corduroy" bridges to support their artillery —bridges invisible in the daylight, even from the air. Marshal Choe meant to meet the 15 August deadline for the reunification of his nation.

The Americans had been equally busy. They too were building up stockpiles and reorganizing. Part of the UN force, which meant they were under Gen. MacArthur's and Gen. Walker's command, the ROK Army was rebuilt. It was now composed of five divisions in two corps, with about 80,000 men. An additional regiment, the 17th, was assigned to the badly decimated U.S. 24th Division, now commanded by Maj. Gen. John H. Church. A command shakeup had put competent commanders where they belonged, and the ROK divisions had been entirely equipped with incoming American gear.

The ROKs were assigned the north of the Perimeter, from the east coast near Yongdok, along the mountains to the headwaters of the Naktong. Adjoining them there was the 1st Cavalry Division, south of which was the 24th and then the 25th Infantry Divisions and the newly arrived 5th Regimental Combat Team, whose sleeves brushed the sea. Most American regiments had been augmented by drafts of South Koreans, but language and other problems relegated them to labor rather than combat roles.

With virtually every unit on line, Gen. Walker frenetically searched for at least minimal reserves—engineers, cooks, MPs, anyone—and prayed for reinforcement. As T. R. Fehrenbach wrote in *This Kind of War,* his superb history of the war: "All over the world, the Army had turned on the vacuum cleaner, and its apex was Pusan." However, the tank battalions and many infantry reinforcements were still in the tube.

In the air, however, the situation was definitely improving. Beginning on 1 August, FEAF supplemented its close air support missions with night intruder sorties, straining the nerves of the NKPA and often providing an uplifting show for watching GIs. The next day, an orchestrated interdiction campaign was launched, with railroad lines, tunnels, bridges and marshaling yards, as well as vehicular bottlenecks, targeted by everything from Corsair fighter-bombers to B-29s. Enemy motor and rail traffic was soon erased both in the North and South, even in darkness.



FEAF flew an average of 238 close support sorties daily against the NKPA which to crack the Perimeter was forced to mass troops, equipment, munitions and tanks, increasing their vulnerability. The effects could be devastating: the NKPA 8th Division in one FEAF air strike lost ten 75-mm guns, three 122-mm howitzers, 20 tanks, 50 trucks and other equipment, in addition to its many killed and wounded.

During the night of 4 August, Marshal Choe moved, and the American line was

riously pierced in several places. The ost serious was the NKPA seizure of e Naktong "Bulge," which was the re- onsibility of Gen. Church's 34th Infan- y. Into the Bulge swarmed and padded e 18th Regiment and other parts of aj. Gen. Lee Kwon Mu's 4th Division, hich had just been awarded the honor- c title of "Seoul Division" by Premier im. They took and dug in on promi- nt Cloverleaf Hill and Obong-ni Ridge, hich overlooks the vital road to Yong- n. Here would occur two weeks of the ar's most vicious fighting.

Into the Naktong Bulge was thrown erything that Gen. Walker could beg, rrow or steal. Yet night after night, en. Lee continued to feed his crack di- sion across its corduroy bridges, bat- lions seeping outward through the sere d blasted hills toward Yongsan.

The repeatedly mauled 34th Infantry ed valiantly on 5 August and later to gain the Bulge but failed. Gen. Walker as forced to relinquish the just-arrived

ward Yongsan. The Wolfhounds ground Gen. Lee's regiments to a halt and, with heavy losses themselves, pushed them back into the Bulge.

However, the NKPA, while checked, was firmly ensconced on Cloverleaf and Obong-ni, awaiting the disintegration of the Perimeter from attacks elsewhere.

Gen. Lee's 4th Division was hardly Gen. Walker's only problem—a major, two-division NKPA drive along the east coast was pushing the ROKs back toward Yongdok, Pohang (a major crossroads) and the vital Yonil air base—but it was the most immediately threatening. It was time to gamble. With daring and precision, Gen. Walker placed all of his chips on the Bulge.

A measure of his desperation and FEAF's desire to ease it came on 16 August. To prevent the additional NKPA regiments that were then massing from crossing the Naktong River just north of the Bulge, FEAF used its heavy strategic bombers as artillery. A "carpet bombing" mission by 98 B-29s came in at 10,000 feet and laid an awesome 3,084 500-pound and 150 1,000-pound bombs on the enemy assembly area.

The results were never ascertained and the technique was not repeated. However, the literally earth-shaking display was a sobering one to the NKPA, who began begging the Soviets for adequate antiaircraft weapons.

Against Gen. Lee's surviving soldiers, deeply entrenched on the Bulge's high ground, Gen. Walker pitted the 9th, 19th and 34th Infantry attacking Cloverleaf from the south with some of the first medium tanks to arrive (six tank battalions would debark in August). Meanwhile, the fresh, full-strength 1st Marine Brigade descended upon Obong-ni from the north.

The attacks began on 17 August. While the Marines made only slight progress against Obong-ni, the 9th Infantry plowed through heavy fire up the slopes of Cloverleaf and all but annihilated the napalm-blasted NKPA regiment dug into that moonscape. The other two regiments swung their attack toward the south slope of Obong-ni, where they, like the Marines, were soon stalled.

That night, Gen. Lee's men on Obong-ni, almost out of ammunition and food, launched their own attack on a fresh battalion of Marines holding the lower slopes. Screaming, grenade-throwing squads slammed into the Marines, swirled around and through them and died in heaps by the light of American flares.

For several hours, they came running out of the darkness, but their attack failed utterly and their remnants faded back to their positions to be pounded mercilessly the next day by artillery and air (FEAF, Navy and Marine).

When two battalions of Marines attacked later that day, it was largely a matter of mopping up. Gen. Lee's proud "Seoul Division" was a wreck, with less than 40 percent of its men scrambling across the Naktong River under ceaseless pounding from the air. Behind them, amidst the bodies of their comrades, they left all 34 of their fieldpieces. The Bulge, a geographic abscess, had been lanced.

Gen. Walker had won his gamble, but it had been a close thing, even with the commitment of his entire reserve. On the east coast, the NKPA 5th and 12th Divisions and a border brigade were pressing the ROK 3rd and parts of the Capital Di-



This North Korean T-34/85 tank (left), *guarding the main road to Waegwan, was destroyed by a napalm bomb during fighting in September 1950.*

At right, *South Korean (ROK) recruits in Pusan march to a training center, where they will be prepared to go into action against North Korean forces.*

h Infantry to Gen. Church for another y. The 9th was composed mostly of ew recruits with almost no training. They had just been issued their light ut not heavy) arms and were sent against en. Lee's hardened veterans with their nsited-in rifles still glistening with Cos- oline. Despite their handicaps and de- ite their failure, the men of the 9th, pported by parts of Gen. Church's di- sion, fought tenaciously against the g-in NKPA in close-range, often hand- -hand combat.

With great reluctance, but because there as no alternative, Gen. Walker ordered e 27th (Wolfhound) Infantry of the 25th ivision northward to contain the NK- A 4th, which was still progressing to-



U.S. troops were pulled back on this hillside to regroup and get some rest after two days of intense fighting in early September 1950.



Above, *a crowd is on hand to witness the arrival of the first 2½-ton Army truck airlifted to Korea.*



Soldiers of the 24th Infantry Division man a machine-gun nest on the rocky heights above the Kap-ch'on River, in front of Taejon, July 1950.

vision into a fighting retreat. Without massive American air support and gunfire from the USS *Helena's* 8-inch guns, the ROKs might have collapsed.

However ROK courage, paired with U.S. firepower, slowed the NKPA advance, and Gen. Walker threw his last pitiful reserves toward the ROK rear.

Task Force (Brig. Gen. Joseph S.) Bradley, composed of a battalion of the 9th Infantry, a single company of tanks and a few even smaller elements, headed north. To its surprise, the task force had to fight its way through several NKPA roadblocks far in the ROK rear. Still, it reached Yonil airfield and dug in.

On 16 August, the ROK 3rd Division, nearly cut off by massive NKPA infiltration, was almost magically spirited away by the U.S. Navy. It landed farther south, near the airfield, where it linked up with the Capital Division and Task Force Bradley.

From 13 to 18 August, the two ROK Divisions (with air support) fought the enemy to a bloody standstill, shattered it and began to push it back into the roadless mountains. As the NKPA reeled back, its exposed right flank was badly battered by the ROK 8th Division. The threat to the east coast had been countered.

While the Bulge and the Coast were aflame, the rest of the front was erupting as well. Between 4 and 9 August, the NKPA 2nd, 3rd, 8th, 13th and 15th Divisions were thrown against the ROK 1st and 6th and the American 1st Cavalry Divisions. Prompt and savage counterattacks by the latter unit soon cleared its sector, all but eradicating the NKPA 3rd Division.

Recapturing their old positions, the Americans were horrified to find them littered with the bound and executed bodies of their buddies, captured in the first NKPA rushes. The cavalrymen were hence forth reluctant to surrender, no matter how hopeless their position. Fanaticism bred fanaticism.

To their north, the ROKs fought stubbornly, but their 1st Division's frontage sprang huge leaks. The NKPA spouted through, some communist regiments pushing behind the 1st Cavalry toward Taegu, a vital rail and road center. For several days, the fieldguns of the 1st Cavalry had to fire in opposite directions against the attacking foe.

The ROKs, their line shattered, retreated before the NKPA 13th Division (reinforced and with new armor), taking up

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ositions on two chains of hills lining the Bowling Alley," a 13-mile-long valley ading to Taegu. At the Taegu end of ıe Bowling Alley the much-bloodied 7th Infantry materialized.

The communists, unable to take the ills, were channeled by the ROK posi- ons into the American guns in an action ord Tennyson could have described. For even nights the ROKs held their hills gainst repeated attacks. In combat, at mes they were reduced to bare hands nd martial arts. The ROKs held, the Wolfhounds held, and what was left of ıe enemy 13th Division staggered back, isjointed and disspirited.

By 20 August, five days after their dead- ne, Marshal Choe's NKPA was gutted, ıe morale of its common soldiers shaken ɔ its core. Briefly, morale problems, de- ertion and disobedience kept security de- achment firing squads busy. Discipline nd sense of purpose soon returned, how- ver, in almost direct proportion to re- eipt of new supplies, food and reinforce- ıents.

UN forces within the Perimeter now umbered some 180,000, augmented on 9 August by the arrival of the British rigade. Also present were some 600 me- ium tanks, including M26s, whose 90- ım guns made short work of the T-34s, nd at least eight American fieldguns for very one of the enemy's. American tac- ical air support was now superb and mnipresent. Called in by ground ob- ervers on 30 August, a single flight of -51 Mustangs rocketed, bombed and trafed an NKPA staging area. That same lay, GI patrols counted almost 700 ene- ny bodies in the same spot.

Marshal Choe, however, was indefatig- ble. He used a harsh vacuum cleaner of is own to rebuild his strength to 100,000 y 1 September. Perhaps half of these vere unreliable, untrained or both, but ıe rebuilt his shattered divisions, upgrad- d brigades to division status and created second armored brigade.

He also conceived a new plan, predi- ated on his knowledge that every day rought an increase in UN strength far nore than his own could match. He de- ided to make an all-out attack on the erimeter on 1 September.

He now had 13 understrength divisions 4,000 to 9,000 strong), weak in artillery et buttressed by 100 new T-34s and as- orted units of border and security troops. His desperate plan called for do-or-die ıssaults at five points in the UN line, and ıe was certain that if any two of these ould crack the Perimeter, he would win.

Marshal Choe's 6th and 7th Divisions were to slash through the 25th Division in the south. The 2nd, 4th, 9th and 10th were to destroy the recently arrived U.S. 2nd Division, which had replaced the worn-out 24th, take Miryang and cut the Taegu/Pusan railroad and highway. The 1st, 3rd and 13th were to smash the 1st Cavalry and ROK 1st Division lines; the 8th and 15th were to rout the ROK 6th and 8th east of Taegu; and the 5th and 12th would penetrate the ROK Capital and 3rd Divisions and seize Pohang and Yonil airfield.

About midnight, 31 August, Marshal Choe's legions moved out. Within hours, the UN line was punctured in a dozen places. Despite all possible preparations the American and ROK soldiers were simply spread too thin to contain the enemy surges.

Nowhere was this more clear than in Maj. Gen. Laurence B. Keiser's 2nd Di-



U.S. soldiers search for enemy snipers during street fighting in a South Korean town in July 1950.

vision. In part due to terrain features, one of his regiments, the 9th Infantry, "held" a front of over 20,000 yards (about 12.5 miles). Its G Company alone was responsible for a full third of that!

It was the tightly stretched 9th Infantry which was hit by Gen. Pak Kyo Sam's 9th Division, which was spearheaded by dozens of NKPA soldiers in American uniforms, speaking clipped phrases in English as if they were ROKs. Soon the crescendo of battle burst upon the 2nd Division. By dawn, Gen. Keiser learned that it had been split in two. His headquarters units and the 9th Infantry, surrounded by NKPA, were cut off from the 23rd and 38th Infantry, which were almost swamped by Gen. Lee's 2nd and rebuilt 4th Divisions. There was a hole six miles wide and up to eight miles deep, and it was full of the enemy.

While air support, described simply as "spectacular," took its heavy toll of the NKPA, the crisis was real and dangerous. Yongsan quickly fell to the enemy. Gen. Walker, apprised of this (and other) crises, did not hesitate. He sent in his scant reserves: the rebuilt 19th and 27th Infantry and the 5th Marines. He informed the rest of the Marine Brigade that it must postpone its planned departure to join the Inchon invasion force and instead retake the same Cloverleaf and Obong-ni that it had cleared two weeks before. Gen. Walker had one advantage he had lacked before: the newly arrived tank battalions, whose 90-mm guns swept aside the few T-34s encountered, clearing the way for his reserves.

In bitter fighting in which bayonets were used, Yongsan was retaken from the NKPA on 2 September. The next day, a Sunday, the Marines began hammering the enemy back into the Bulge, which was again being pitted and pocked by American airpower.

While this counterattack was making progress, the 23rd Infantry, north of the Bulge and basically surrounded, fought toe to toe with the NKPA 2nd Division, utterly sapping that unit of offensive power and will. At the same time, the 9th Infantry, with the 2nd Battalion of Combat Engineers fighting as infantry, battered the NKPA in the six-mile-wide breach.

By 5 September, the NKPA 9th Division, assaulted by parts of the U.S. 2nd Division and the reserves, was all but destroyed, clinging only to a blasted portion of Obong-ni.

A few days later, in frustration, the NKPA 9th Division attacked U.S. Army positions, screaming forward in five waves,



U.S. forces with bazookas march past a destroyed enemy T–34/85 tank as they advance north. In the foreground (at left) *South Korean civilians remove the dead.*

only the first three of which were armed: a measure of desperation bound to fail. It was the unexplained luck of the UN Command that the 7,000-man NKPA 10th Division—in auditory range of the action—sat immobile. Had it moved against the 23rd Infantry or Taegu, the outcome of the struggle might well have been different.

The 25th Division, to the south, was also in trouble; penetrated, its 35th Infantry was awash in and surrounded by the NKPA, with entire enemy battalions roaming its rear areas. The 35th held against enormous pressure and was awarded a Presidential Unit Citation. However, on its south, the 24th Infantry broke under the NKPA's assaults and the enemy poured through. Only constant air strikes and a vicious counterattack by the almost exhausted 27th Infantry brought the NKPA to a standstill.

The 1st Cavalry was not spared either. It was being mauled and pushed back (but not broken) by the NKPA 1st and 13th Divisions, some of whose regiments reached a point only eight miles from crucial Taegu. The 1st Cavalry's regiments were decimated and its batteries gravely handicapped by a scarcity of 105-mm ammunition. Luckily, however, the fresh British Brigade had moved in on their left flank, allowing them to shorten their line.

Still, the fanatical enemy came on. On 12 September, the NKPA took Hill 314, the "key" to Taegu. The division commander, Maj. Gen. Hobart R. Gay, turned to Lt. Col. James H. Lynch and ordered him to retake Hill 314 with the 3rd Battalion, 7th Cavalry, at all costs. There was no preliminary bombardment because there were no 105-mm shells, and only a brief air strike. Col. Lynch led his 535 men in an old-fashioned bayonet charge up the steep slopes under withering, plunging fire. One of his company commanders, gaining the crest, shouted to the rest of the battalion: "Come on up here! You can see them here. There are lots of them, and you can kill them."

In three hours of close-quarters, no-quarter-given fighting, Hill 314 again changed hands—this time for good. Col. Lynch's men found in the enemy positions some 300 NKPA: dead, emaciated, dressed in American uniforms and clutching M1 rifles. They also found a number of Americans, obviously executed by the panicking NKPA. Some bore the marks of brutal torture. Hill 314 was not soon forgotten by the 7th Cavalry.

The NKPA 13th Division, blocked from Taegu and savagely torn, began to come apart. Some of its men fled wildly westward, others deserted and melted into the countryside, and many surrendered. Its artillery lost, its best men gone, the 13th ceased to exist as a division.

The day 12 September marked the last gasp of the NKPA. Everywhere, they were backing off and/or being pushed back, most divisions gutted and broken. The Perimeter had been saved. The Marines, released to Gen. MacArthur on 6 September to help constitute the 1st Marine Division, landed with the Army's 7th Division at Inchon on 15 September near Seoul, and remnants of the once-proud NKPA, threatened with encirclement, streamed frantically north from the Naktong River to escape.

The war would drag on, agonizingly, for almost three more years. There would be surprises and setbacks for the UN Command. Yet the war, grim as it was, would never threaten the UN presence in Korea as it had along the Naktong River in its first months. The U.S. Army, ill-prepared and equipped as it was in June and July of 1950, had done its job and done it well. By October, the outcome was no longer in doubt.

Button Up!

As the tough old infantry colonel inspected the basic trainees who were firing on my range, I stood hoping that the NCOs had everything in hand.

The colonel chewed out some of the instructors and many of the trainees for what he perceived to be incorrect methods of instruction or incorrect firing procedures.

He seemed to have found a major infraction when he was chewing out a trainee who had his right fatigue pocket unbuttoned.

"Do you see that unbuttoned pocket?" bellowed the colonel.

"Yes sir," shouted the trainee.

"Then button it . . . now!"

The trainee hesitated for a second or two and then reached over and buttoned the colonel's fatigue pocket.

Within 30 seconds, the colonel and his jeep were heading down the road.

JOSEPH J. BABICO JR.

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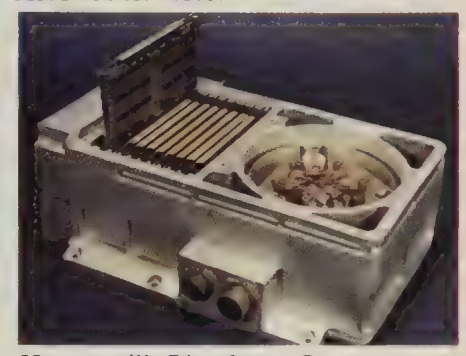
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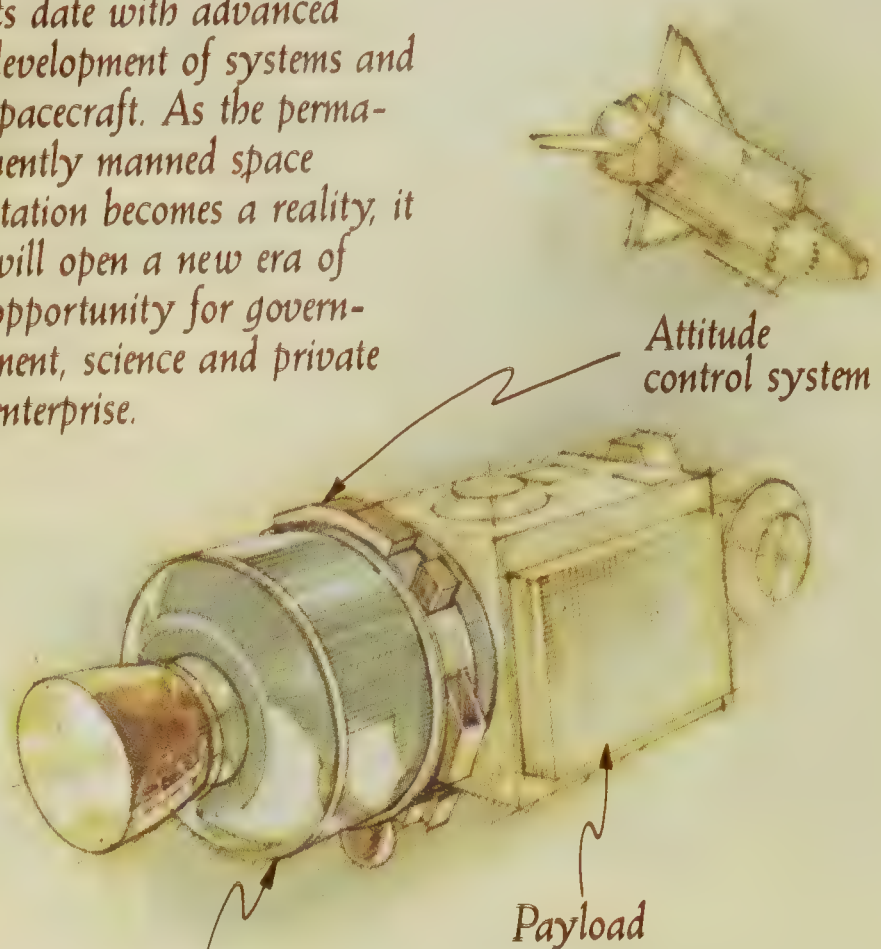
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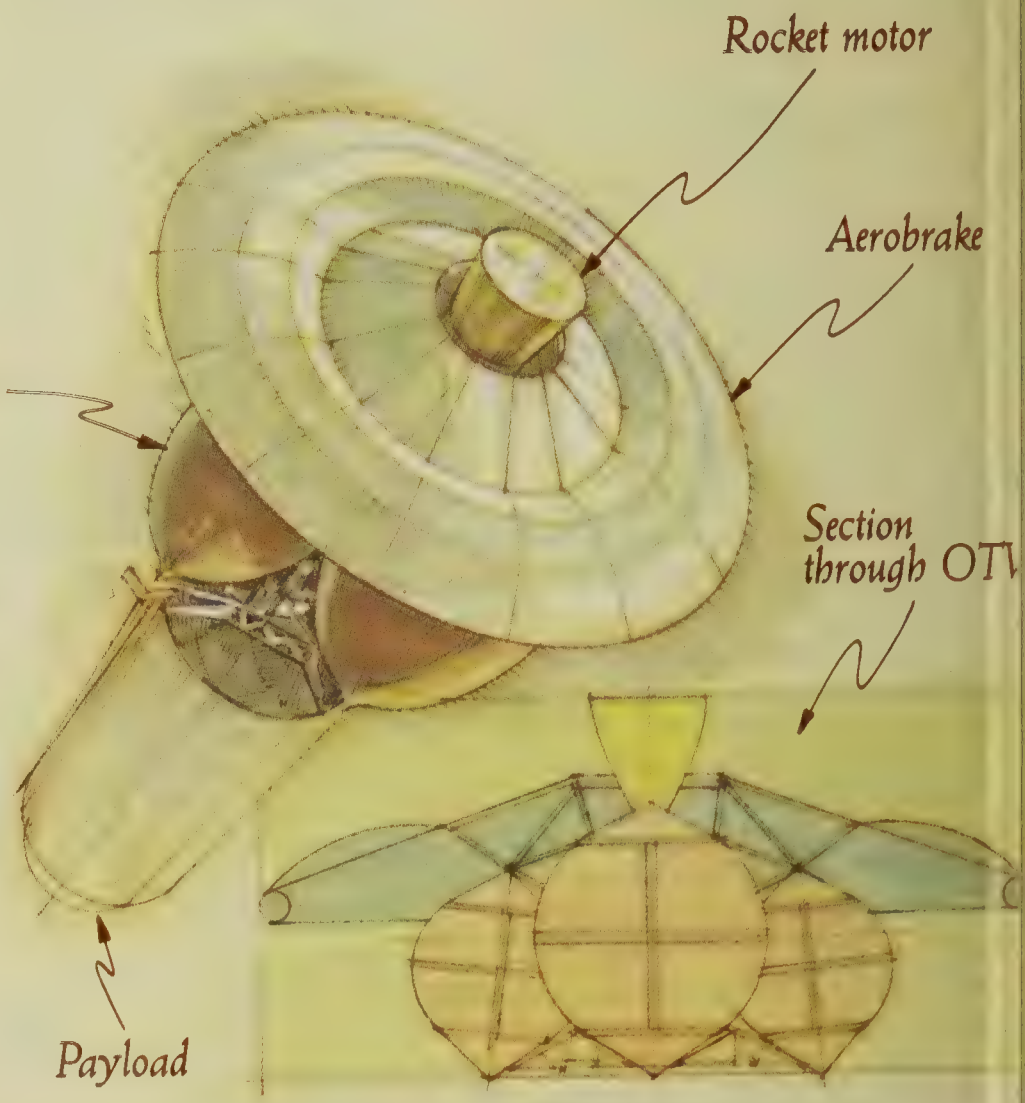
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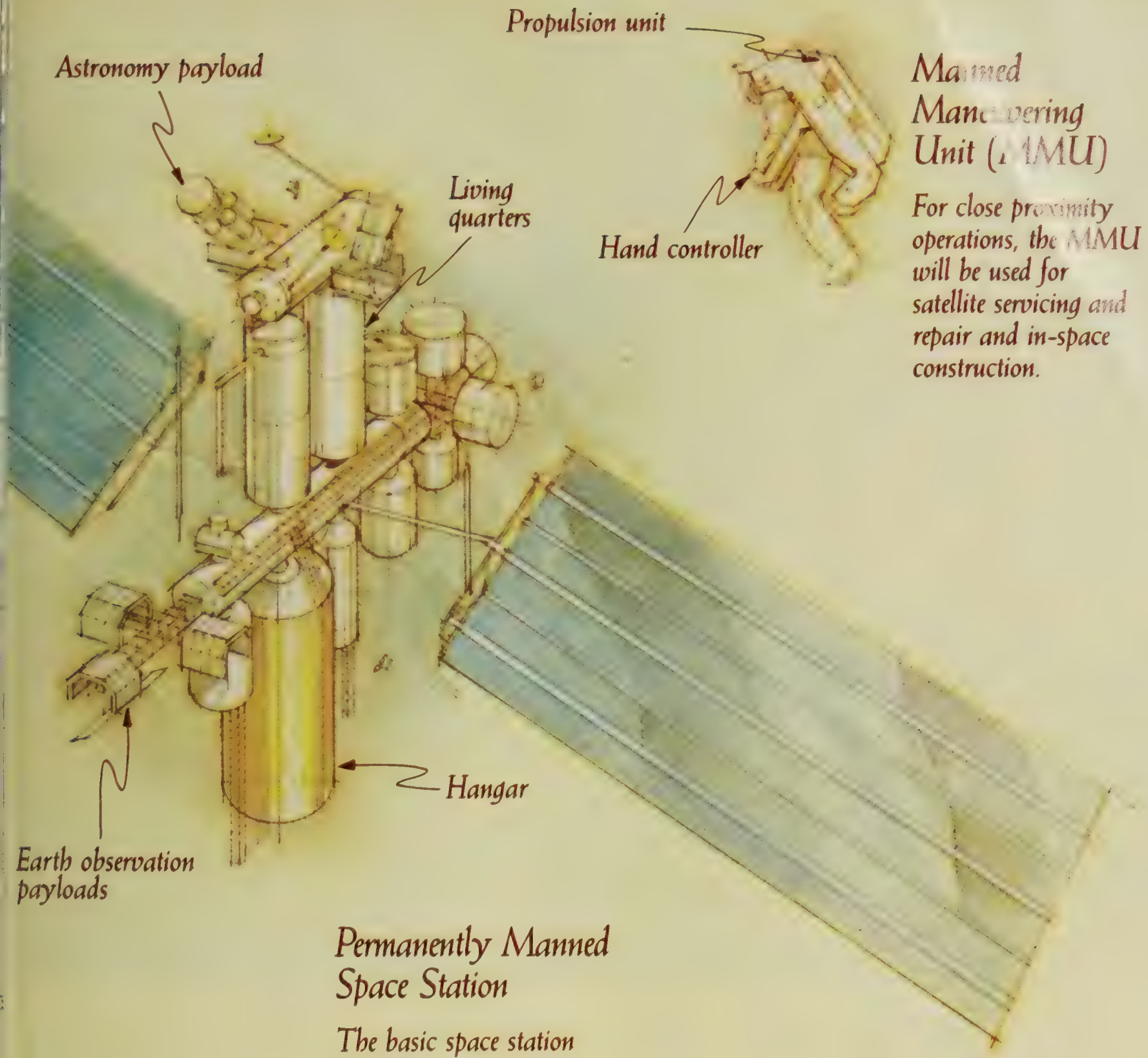
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Factor Study Under Way

The Army has begun an extensive survey of its troops to ermine what "X" factors—unique conditions of military life ıave the greatest impact upon retention. Some 80,000 sol- rs are now receiving the surveys, which include more than) questions. The survey, conducted by the Army's Concepts alysis Agency for the Office of the Deputy Chief of Staff Personnel, is expected to provide data which can be used develop and support future compensation adjustments.

The survey participants, E4s through senior-level officers at tallations worldwide, are being asked for their opinions not ly on prevailing conditions and policies currently in effect, t on a number of proposed changes to compensation such those being discussed by Congress. These issues include:

- Restrictions on movement and other personal liberties.
- Separation from family members during unaccompanied erseas tours.
- Paying out-of-pocket for permanent-change-of-station ›ves.

The Bulletin Board

- Loss of equity in homes due to frequent reassignment.
- The possibility of subjecting all pay and benefits to tax- on.
- The prospect of a minimum of 25 years of service to alify for retirement.
- The positive effect of having all educational benefits paid the Army.
- Continuing the "up-or-out" retention policy.
- Job satisfaction and opportunities for learning a profes- ›n.

The results of the study are expected to be released before e end of this year.

ımily Hotline Discontinued

Due to the expansion of family-related services at the instal- :ion level and the sharp drop in the number of calls to the :my's toll-free "family life" communications line, that "hot- ıe" service is being dropped, according to personnel officials.

The hotline was established four years ago "to provide sol- ers and family members the opportunity to air problems and mplaints, and to cut through red tape on personal, financial .d job-related problems," say officials. At the outset, hun- eds of people called the hotline each month, but fewer than calls a month have been received during the past year. The op in the number of calls has been attributed to the increase the number of family-service programs adopted at the in- allation, headquarters and agency levels.

urvivor Benefits Notification

The Army Military Personnel Center's Casualty and Memo- al Affairs Operations Center is conducting a joint test pro- am with the Army Mutual Aid Association (AMAA) "de- gned to give survivors a quick estimate of the veteran's and cial security benefits they are entitled to."

Survivors now have to make separate trips to their local eterans Administration and Social Security offices, sometimes weeks after the sponsor's death, to determine what benefits they are entitled to.

Under the system now being studied, a survivor assistance officer would notify the survivor within a few days of the veteran's death of the probable benefits available. After determining information such as how many children the survivor has and their ages, the survivor assistance officer would immediately relay that data to the AMAA. Using its computers, the AMAA could then estimate the veteran and social security benefits available to the survivor in a matter of minutes.

The study is scheduled to be completed next month.

Married Couples Program Update

The Army's married couples program and joint domicile program have been merged to provide all married couples the earliest possible consideration for joint assignment. After 1 October, only those couples enrolled in the married Army couples program will be considered for joint assignment, according to Military Personnel Center (MILPERCEN) officials.

Presently, married couples may request joint assignment either through the married couples program or the joint domicile program. While soldiers enrolled in the married couples program receive "automatic consideration for assignments early in the assignment process," soldiers in the joint domicile program may request a joint assignment only after a spouse has received assignment orders.

"Under the present joint domicile program," notes MILPERCEN, "after one soldier receives assignment instructions, assignment officials are often unable to find a vacancy for the spouse in the same geographic area, because most vacancies are filled early in the assignment process."

Beginning on 1 October, both soldiers will receive assignment instructions at the same time, rather than after one of them already has orders. Soldiers marrying after 1 October must enroll in the program within 60 days of the day they were married to be eligible. Soldiers married to members of other services are not eligible for the program.

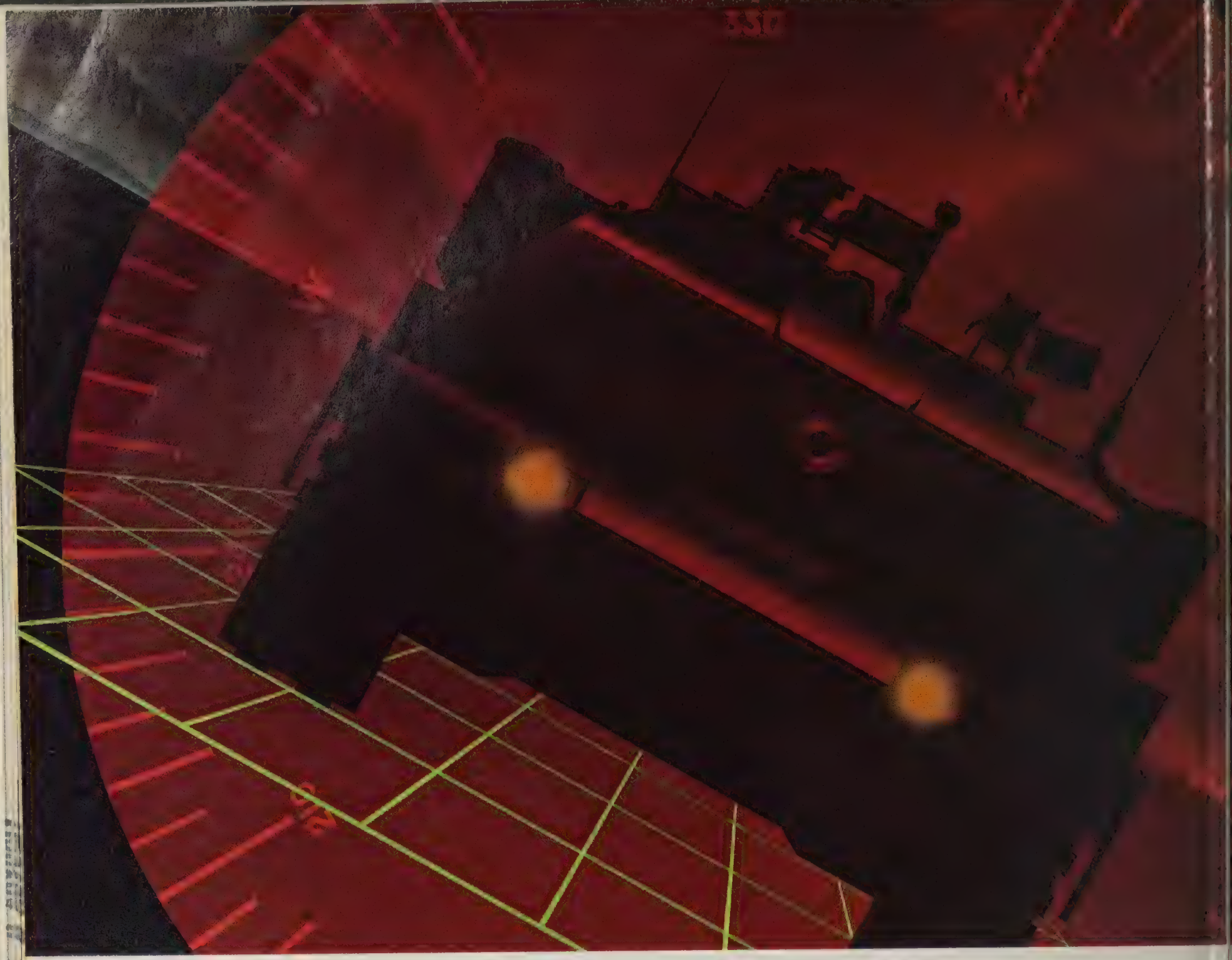
Currently, there are more than 18,000 married couples in the Army and only half of them are enrolled in the married couples program.

Dependent Dental Care Expanded

All 38 of the Army's dental activities in the United States now provide dental care for the dependents of active-duty soldiers on a space-available basis, under a provision of the 1985 Defense Authorization Act, effective 1 July. Previously, only 24 of the stateside dental activities were allowed to offer care to dependents, based on the determination that they were at "underserved" locations.

The 14 additional dental activities that may serve active-duty dependents as their patient load permits are at Ft. Belvoir, Va.; Ft. Carson, Colo.; Ft. Devens, Mass.; Fitzsimons Army Medical Center, Colo.; Tripler Army Medical Center, Hawaii; Ft. Sheridan, Ill.; Ft. Monmouth, N.J.; Ft. Lewis, Wash.; Ft. Meade, Md.; Ft. Ord, Calif.; the Presidio of San Francisco, Calif.; Ft. Sam Houston, Tex.; Walter Reed Army Medical Center, Washington, D.C.; and West Point, N.Y.

As in the past, priority for dental care will go first to active-duty soldiers, then to their dependents, the dependents of service members who have died on active duty, retirees and their dependents. Active-duty family members at overseas locations will continue to be provided the maximum dental care possible.



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Shown below are some of the vehicles which can be equipped with the VNAS system.



Phase II of Regimental System Will Get Under Way Next Year

The Army will begin implementing the ond stage of its regimental system ear- next year, and officials are "projecting of the regiments, some 90 plus, will on board by the end of 1992," accord- ; to a spokesman from the new man- ıg system (NMS) division at the Penta- n.

The Army chief of staff, Gen. John A. ickham Jr., has been presented a plan der which the first phase II group of

News Call

ziments will begin formation in May 86. However, he has been asked to nsider the establishment of at least one ziment as early as January.

"Early in 1981, the Army decided to nper its exclusive reliance on the indi- dual replacement system and begin care- l implementation of the new manning stem," noted the deputy chief of staff r personnel, Lt. Gen. Robert M. Elton. ıe new manning system contained two cets: the COHORT (cohesion, opera- ɔnal readiness and training) unit move- ent system and the Army Regimental ystem.

The purpose of the latter, according to en. Elton, is to establish greater unit ɔnding among the soldiers through the signment of battalions to stabilized regi- ents. Soldiers are then affiliated throughout their careers with regiments whose battalions all perform the same kinds of duties. In addition, the distinguished histories and traditions of the regiments receive continued emphasis within the individual units.

Throughout the process, "the Army's objective has been to retain the most distinguished and meaningful regimental colors," said Gen. Elton.

Phase I implementation of the system began in January 1983 and ended in August 1984 with the organization of 15 regiments. Those regiments are, in order of establishment, the 327th Infantry, the 23rd Infantry, the 16th Infantry, the 37th Armor, the 5th Field Artillery, the 9th Infantry, the 325th Infantry, the 8th Field Artillery, the 187th Infantry, the 66th Armor, the 3rd Field Artillery, the 29th Field Artillery, the 68th Armor, the 502nd Infantry and the 8th Infantry.

Phase II was originally scheduled to begin this year, but Army officials delayed further implementation because of conflicts with current force modernization efforts, in particular, the push to create the new light infantry divisions.

Under phase II, units will be formed at a rate of about one regiment each month over a seven-year period beginning next year. In addition to the infantry, armor and artillery units organized during the first stage of the program, cavalry and aviation regiments will be established. As with the original 15 units, each future regiment will have an honorary colonel and sergeant major, as well as a number of distinguished members of the regiment appointed on a one-year renewable basis, to help perpetuate regimental traditions.

Officials have stressed that the regimental system is not designed as a tactical organization, but for assignment purposes only.

They feel that regimental affiliation will benefit the soldier in a number of ways: it will provide soldiers with recurring assignments to units within their regiment and with opportunities for soldiers to serve repetitive tours in the same geographic location; it will allow for increased professional specialization; it will foster a greater sense of belonging and unit identity; and it will increase the predictability of assignments and improve family support.

"The system will not stifle the soldier's professional development," said one official. "It will only give him greater predictablity as regards assignments."

During what has tentatively been described as phase III, combat support and combat service support units will be incorporated into the regimental system. Each branch proponent school has evaluated the feasibility of having its personnel integrated into the system, and they have presented their recommendations to the chief of staff. The support units are expected to be brought into the process as soon as such a move can be practically accomplished.

In addition to the 90-plus regiments now slated for activation, some regimental colors will be saved by placing them in training battalions. This concept is being developed by the Army's Training and Doctrine Command.

SFC Gregory Taylor, first sergeant, U.S. Military Support Element–Grenada, was among the last contingent of troops returning this summer from occupation duty on Grenada. He is shown here on the flight line at Pope Air Force Base, N.C., where the soldiers were greeted by XVIII Airborne Corps and Ft. Bragg Commander Lt. Gen. James J. Lindsay. The support element was activated on 15 December, 1983, following operation 'Urgent Fury.' A limited number of troops remain on the island in a training capacity.



U.S. Army photo by Sp.4 Stephen Pollock

Battle Dress Uniform Update. The Army's new hot-weather battle dress uniform (BDU) will be available for purchase at military clothing sales stores around the end of this year. Officials say the uniform should be on the shelves of stores in the continental United States in December, and at the overseas stores in January or February. The hot-weather BDU will sell for about $37.

The new BDU was developed following numerous complaints from soldiers that the current version is too heavy for wear during the summer and in warmer climates. The hot-weather BDU will look just like the current "temperate" version. According to an official from the Army's clothing and appearance team, "It is the same style and design. The only main difference is the fabric itself, which is a lot lighter. Today's uniform weighs 7.5 ounces [a square yard] and the new uniform will weigh approximately 5.5 ounces." The hot-weather BDU is made of 100-percent cotton fabric, while the

temperate BDU is a blend of 50 percent cotton and 50 percent nylon.

"The modifications that were made to the temperate BDU have been incorporated into the hot-weather BDU," said the uniform official. Modifications include a smaller collar, take-up tabs on the side and more material for underarm room.

In a related development, the Army has announced that soldiers at continental U.S. installations may wear the Vietnam-era "jungle fatigues" as an optional uniform through August 1986.

Although a policy statement was made last September on this issue, confusion has continued, requiring further clarification.

Under this policy, jungle fatigues may be worn throughout the year, subject to prohibitions by local commanders for specific occasions requiring that soldiers be dressed uniformly.

Drill sergeants and trainees are the only stateside soldiers not allowed to wear the jungle fatigues. The uniform may be worn overseas only where commanders have issued it as an organizational item.

The jungle fatigues, like the new hot-weather BDU, are made entirely of cotton. They may be purchased in military clothing sales stores for $8, but commanders cannot require any soldier to buy the uniform.

Canadian Army Trophy. NATO's Northern Army Group (NORTHAG) team won this year's Canadian Army Trophy for tank gunnery, with Central Army Group's (CENTAG's) West German *Panzerbatallion* 244 taking top individual honors among the 20 competing NATO platoons. The five-day competition was dominated by the M1 Abrams main battle tank and West Germany's Leopard 2 battle tank, with the two models accounting for the top nine individual tank crew scores.

The NORTHAG team's overall winning score was 190,755 points, while the CENTAG team scored a total of 185,656 points. West German *Panzerbattal on* 244's winning platoon score was 22,037 points to lead the CENTAG team. The Netherlands' 43rd *Tankbataljon* paced the NORTHAG team with 21,364.

M1 Abrams-equipped U.S. platoons were among the top three scorers on each team. Platoons from the 3rd Battalion, 64th Armor, both on the CENTAG team, posted second and third place scores of 21,934 points and 21,321 points, respectively.

The top U.S. tank gunners of the NORTHAG team were a pair of platoons from the 2nd Battalion, 66th Armor with point scores of 20,314 and 20,305 also good for second and third place.

Scores and performances were consistently above the last Canadian Army Trophy competition in 1983, with the M1 Abrams crews all topping 20,000 points. The effective use of the M1's laser rangefinde

GENERAL OFFICER CHANGES



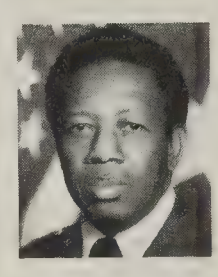
Lt. Gen. C.W. Bagnal from DCG–Tng, TRADOC, to CG, WESTCOM.



Lt. Gen. C.W. Dyke from CG, 8th Inf. Div. (Mech), to CG, USA Japan/IX Corps.



Lt. Gen. R.H. Forman from CS, TRADOC, to DCG–Tng, TRADOC.



Maj. Gen. J.M. Brown from DCS, Compt., FORSCOM, to DCG, III Corps & FH.



Maj. Gen. P.G. Burbules from CG, AAM&CC, to CG, MISCOM.



Maj. Gen. J.S. Crosby from DMPB, ODCSPER, to ADCSPER.



Maj. Gen. C.T. Ivey from C–USDR, Pakistan, to DCG, XVIII Abn. Corps & FB.



Maj. Gen. C.H. McNair Jr. from DCS–CD, TRADOC, to CS, TRADOC.



Maj. Gen. Julius Parker Jr. from DDM&O, DIA, to CG, USAICS.



Maj. Gen. H.N. Schwarzkopf from ADCSPER to ADCSOPS.



Maj. Gen. C.E. Teeter from DOPM, MILPERCEN, to DIG(I), OIG.

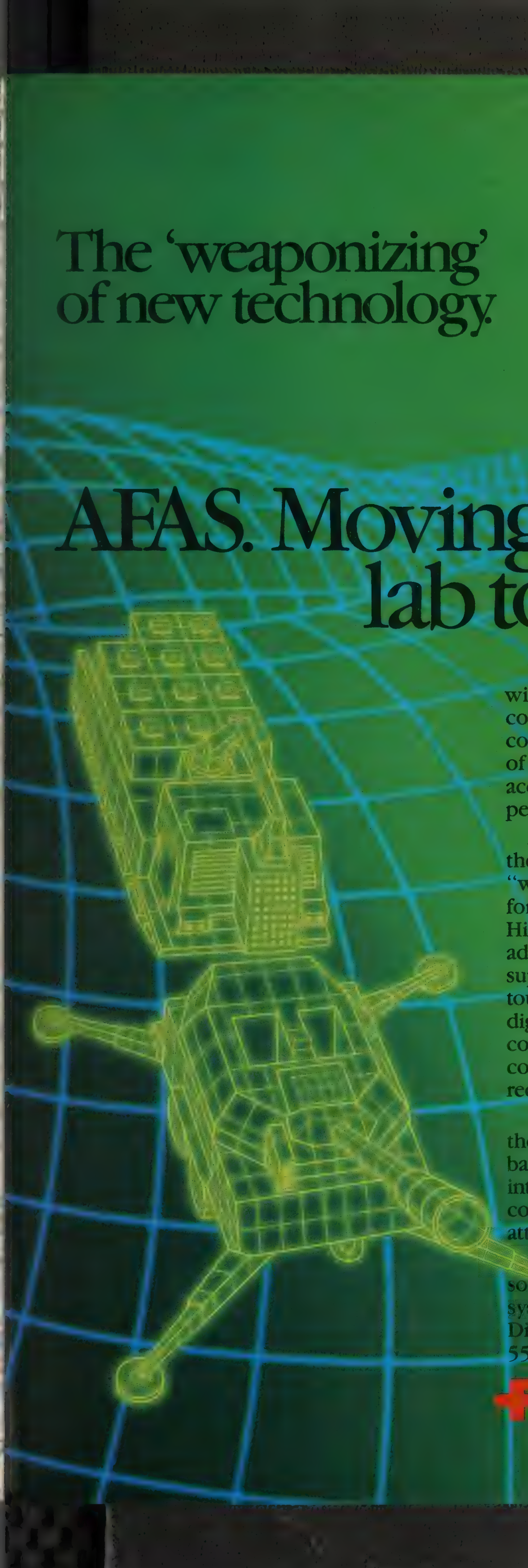


Maj. Gen. G.G. Watson from DIG(I), OIG, to CG, USAC& MPC.

Brigadier Generals: **R.H. Buker** from CG, BAMC, FSHT, to DSG, OSG; **Sidney Davis** from DNCD, ODCSOPS/CG, USANCA, to DASD(MA), OASD(AE); **R.L. Gordon** from DCSRM, TRADOC, to DCSRM, USAREUR; **H.M. Hagwood Jr.** from CS, USAFATC, FSO, to DCS, Compt., FORSCOM; **J.R. Hall Jr.** from DEPM, MILPERCEN, to CG, MILPERCEN; **C.A. Hines** from Cdr., 14th MP Gp, USAREUR, to DOPM, MILPERCEN; **D.W. Jones** from ADC, 1st Cav. Div., to DDDTE, OUSD(R&E); **G.M. Krausz** from ADC, 3rd Inf. Div. (Mech), to DCS–CD, TRADOC; **G.E. Luck** from ADC, 101st Abn. Div. (A/A), to CG, 2nd Inf. Div.; **C.P. Otstott** from XO, SACEUR, SHAPE, to ADC, 1st Arm. Div.; **W.A. Shoffner** from D–AALBDAPO, ODCSOPS, FLK, to ADC, 1st Cav. Div.; **R.E. Stephenson** from CG, 3rd SUPCOM(C), FWG, to DCG, P&R, AVSCOM; **G.R. Sullivan** from DCG, USAACS, to DCSSUP, CENTAG.

■ ***FH**—Ft. Hood; **AAM&CC**—Army Armament, Munitions and Chemical Command; **DMPB**—Director for Manpower Programs and Budget; **C–USDR**—Chief, U.S. Defense Representative; **FB**—Ft. Bragg; **DCS–CD**—Deputy Chief of Staff for Combat Development; **DDM&O**—Deputy Director for Management and Operations; **USAICS**—U.S. Army Intelligence Center and School; **DOPM**—Director of Officer Personnel Management; **DIG(I)**—Deputy Inspector General for Inspections; **USAC&MPC**—U.S. Army Chemical and Military Police Center; **BAMC, FSHT**—Brooke Army Medical Center, Ft. Sam Houston, Tex.; **DSG**—Deputy Surgeon General; **DNCD**—Director, Nuclear and Chemical Directorate; **USANCA**—U.S. Army Nuclear and Chemical Agency; **DASD(MA), OASD(AE)**—Deputy Assistant to the Secretary of Defense (Military Applications), Office of the Assistant Secretary of Defense (Atomic Energy); **USAFATC, FSO**—U.S. Army Field Artillery Training Center, Ft. Sill, Okla.; **DEPM**—Director of Enlisted Personnel Management; **DDDTE, OUSD(R&E)**—Deputy Director for Defense Test and Evaluation, Office of the Under Secretary of Defense for Research and Engineering; **D–AALBDAPO**—Director, Army AirLand Battle Deep Attack Programs Office; **FLK**—Ft. Leavenworth, Kan.; **FWG**—Frankfurt, West Germany; **P&R**—Procurement and Readiness; **USAACS**—U.S. Army Armor Center and School.*

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King Radio's AN/ARC-199 will provide Army helicopters (including the UH-60 Black Hawk, OH-58 Kiowa, the CH-47D Chinook, the new AHIP and the UH-1 Huey) with advanced radios for the demanding nap of the earth (NOE) mission.

What does the U.S. Army find so appealing about King HF? Several features make the AN/ARC-199 stand out. One is the MIL-STD 1553B data bus interface which provides compatibility with the new avionic systems architecture. Other points in King's favor include the small size and light weight of the AN/ARC-199 (approximately 30 pounds including the CDU) and the reliability associated with King equipment. These weight and space savings allow for the addition of other mission payloads.

Using four microprocessor chips, the AN/ARC-199 is able to automatically scan up to 20 preset channels and will then break squelch only when it receives a transmission containing its unique address. Add to this feature BITE, selectable power output, secure voice and data compatibility plus the growth potential for frequency agility, frequency link analysis, anti-jam circuits, automated communications and electronic operating instructions—and you have the capability for a truly ADAPTIVE HF SYSTEM.

King Radio is also producing the companion radio to the AN/ARC-199—the AN/VRC-86. This radio, which is functionally identical to the AN/ARC-199, will be installed at fixed sites or in Army vehicles. Both radios work with telephone-like simplicity, allowing helicopter pilots to keep in touch with ground forces during tactical operations.

Since winning the initial Army contract, King Radio's successes in tactical HF haven't gone unnoticed. Another HF contract has come our way—this time to build an advanced HF for use in the rugged operational environment of tactical fighter aircraft. King is now producing this radio, the AN/ARC-200 (a derivative of the AN/ARC-199), which will be used in an RAAF version of the F/A-18 strike fighter aircraft.

If King's tactical HF story interests you either from the standpoint of off-the-shelf products or adaptations of the systems we are building, contact: Director, Special Programs Department, King Radio Corporation, 400 North Rogers Road, Olathe, Kansas 66062. (800) 255-6243. Telex WUD (0) 4-2299. Cable: KINGRAD.

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d digital computer was noted during competition, as the tank crews demstrated how quickly they could engage ir targets, even under severely adverse ather conditions.

This year's competition, held in the gen-Höhne region of northern West rmany, was the fourteenth in the se, which is staged every two years.

mpetitors Team Up on LHX. Boe- Vertol Co. and United Technology rp.'s Sikorsky Aircraft Division have eed to work together as a team to deop a bid for the Army's new light helioter experimental (LHX) program.

ate in 1983, the two companies were ong five competitors chosen by the my's Aviation Systems Command to t technology developments for the LHX ogram in anticipation of entering the gineering stage of development in 1987. e merger of the Boeing Vertol and Sirsky LHX efforts has been encouraged the Army, which views teaming as a y to improve the competitive environnt in the technologically challenging d of LHX development.

Jnder the LHX program, the Army uld like to eventually procure nearly 00 highly advanced, single-pilot helioters in the scout-attack and utility sions as replacements for the dated tnam-era helicopters which make up fleet today.

Boeing Vertol is currently involved in development of advanced rotorcraft hnology integration (ARTI) systems, ital optical control systems and comsite-fiber rotor blades and hubs. Sikor- is researching in the areas of ARTI tems, LHX preliminary design, and mposite-fiber airframes, rear fuselages, in rotor heads and rotor blades.

acetime Unit Citation Approved. cretary of the Army John O. Marsh Jr. s sanctioned the awarding of a new it decoration for outstanding perfornce of duty during peacetime known the Army Superior Unit Award. To alify for the award, a unit must demstrate "superior performance of exceponally difficult tasks . . . under extraordinary circumstances that involved the tional interest" and which "set it apart d above other units with similar misns."

Recommendations for the award must made within two years of completion the service for which the unit is to be ognized and may not occur in conction with the receipt of another unit ard. Final approval for the award rests th the Army chief of staff. Any generofficer in the nominee unit's chain of mmand has the authority to disapprove recommendation.

Units earning the award will be presented a unit citation, a certificate and a streamer for the unit flag. Soldiers in the unit who participated in the performance of duty which led to the award will be allowed to wear a ribbon permanently on their uniform, while those who later join the unit may wear the ribbon as long as they serve with the unit.



The ribbon of the new Army Superior Unit Award.

The ribbon consists of a vertical green stripe in the center, a thin yellow stripe on either side, a red background and a gold metallic border.

New Combat Boots. An improved version of the Army's standard black combat boot will be available in June 1986, according to clothing officials. New soldiers will be issued these boots beginning in 1988 as the stock of the current version is depleted.

The boot, designed by the Army's Natick Development Center, Mass., was selected after a four-month "walk-off" competition among six candidates. The new combat boot will feature a padded collar for a more comfortable fit, speed-lace closures with abrasion-resistant laces, a replaceable nailed-on heel and a deep lug-tread rubber sole providing greater traction, durability and resistance to water and mud and stone accumulations.



The new Army black combat boot features a padded collar, speed lacing and a deep lug-tread rubber sole.

Like the current model, the new combat boot will be made of smooth-grain leather and will still require polishing. The boot will be available in sizes ranging from 3 to 14.

Automaker Buys Hughes Aircraft. General Motors Corp. has acquired Hughes Aircraft Co. for an estimated $5.2 billion in the largest purchase price ever paid for a privately owned company.

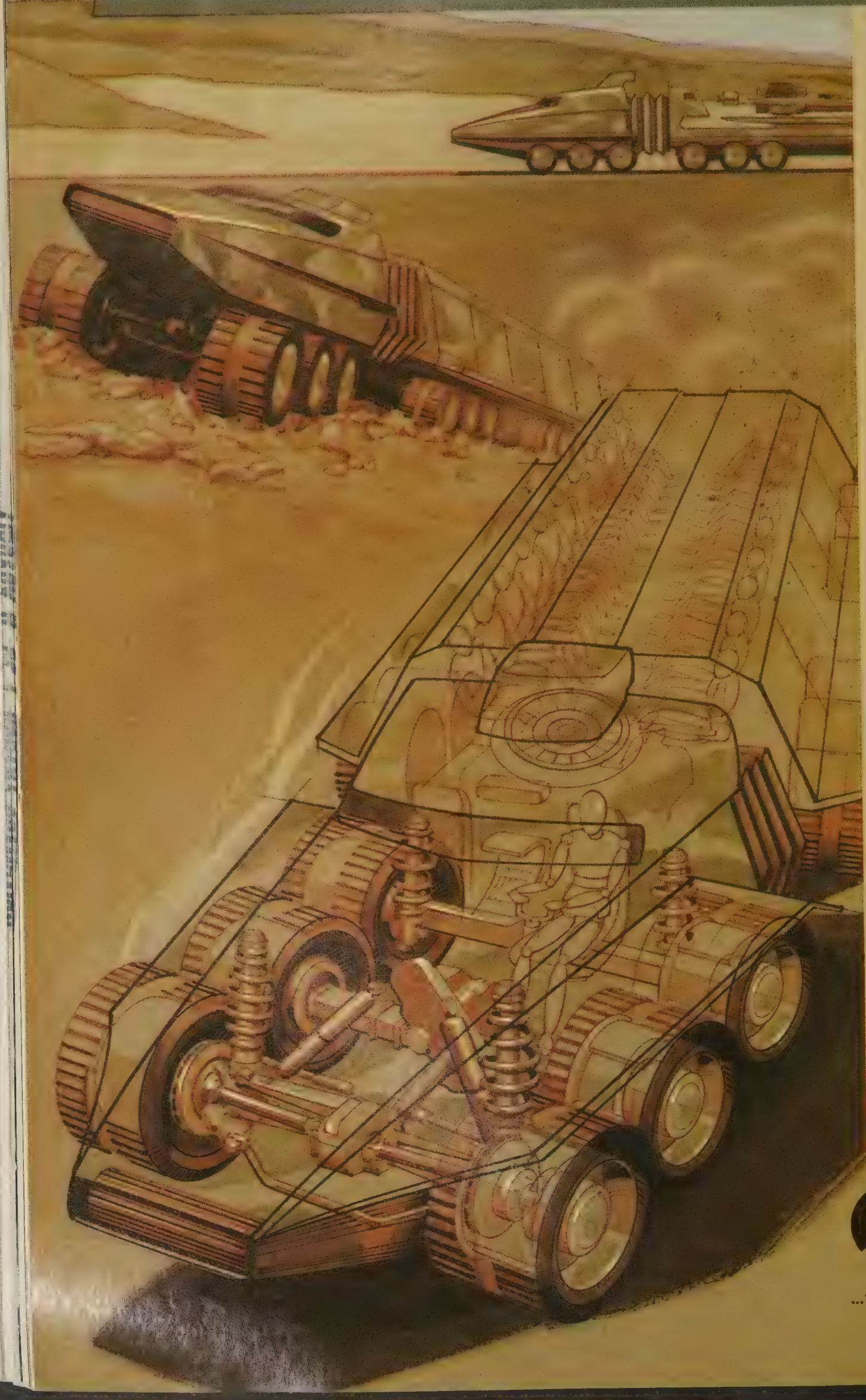
Hughes Aircraft Co. is the nation's seventh largest defense contractor, with $3.2 billion in new military contracts last year.

Specializing in advanced electronics, Hughes' major contracts with the Army include: the laser-ranger finder and thermal imaging system for the M1 Abrams main battle tank; the TOW antitank missile in three versions; the integrated sight system for the Bradley infantry fighting vehicle; the AN/TPQ-36 and AN/TPQ-37 "Firefinder" gun- and mortar-locating radar systems; the airborne TOW missile sight; and the PLRS-JTIDS hybrid (PJH), a digital tactical information distribution system that combines the Hughes position-locating/reporting system with the Army–Air Force joint tactical information distribution system.

The acquisition of Hughes Aircraft by General Motors is seen as an attempt by the giant auto producer to diversify and at the same time gain access to electronics technology which will enable it to make the cars of the next century. The manufacturing expertise of General Motors is also viewed as a potential benefit to Hughes Aircraft, which has had trouble in the past meeting contract production deadlines.

Hughes Aircraft Co. will be merged with three of General Motors' other electronics-related businesses—Delco Electronics Division, Delco Systems Operations, and the Instrument and Display Systems Business unit of the AC Spark Plug Division—to form a new subsidiary company called GM Hughes Electronics Corp. Hughes Aircraft Co. will continue to operate as a separate, independent company, according to General Motors board chairman Roger Smith.

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lated to Be a Classic

Platoon Command Book Tells It All, Brilliantly

atoon Leader. *James McDonough. Presidio Press, 31 Pamaron Way, Novato, Calif. 94947. 195 pages; map; $15.95.*

By Charles B. MacDonald



No assignment for an officer in combat is more trying, more demanding and more perilous than that of rifle atoon leader. The platoon leader shares ost intimately the existence of that small ody of men who do the actual fighting nd the dying, while at the same time he ust shoulder responsibility for the men's elfare and, ultimately, their lives.

Books

After writing my book on my World ar II experiences, *Company Command-*, I eagerly awaited someone doing for e platoon leader what I had tried to do r the company commander. For a long me, no such work emerged, from World ar II or from the Korean War.

In time I came to rationalize that the atoon leader, for all his closeness to his en and thus for all his ability to tell eir story, is too low in the chain of mmand to be able to set his platoon's le in the perspective of the company's aneuvers and objectives. It is much the me, in reverse, for the battalion comander, who knows the big picture but too high in the chain of command to e able to convey a sense of intimacy ith the fighting man.

Still eager to find such a work, I hasty—and mistakenly—embraced an early ook from Vietnam, Philip Caputo's *A umor of War,* but that book failed to ear well. I also thought for a while that had found what I was after in *The Killg Zone: My Life in the Vietnam War* y Frederick Downs; but for all the exllence of that platoon leader's story, uthor Downs failed to surmount the difculty of placing his platoon's role with- the framework of the company's, and e failed to delve deeply into the probms and emotions of leadership.

But now my search at long last is over. *Vith Platoon Leader,* James McDonough as done it all and done it in a way that an hardly be beat.

It should be noted that the author in lling his story has no problem with his mpany's story, for he enters combat in ietnam in 1970 at a time when his plaon is engaged in what is essentially an dependent mission, guarding a Vietnamese hamlet and trying to keep the enemy from massing to destroy the platoon and the hamlet. The role of the company is of little moment.

Joining a platoon of combat veterans as a replacement officer, James McDonough admittedly had the tools for his job, better qualifications than many a platoon leader before or after: U.S. Military Academy, Airborne, Ranger, and jungle warfare schools. Yet just like less-qualified replacements, he had to prove himself, establish his authority and assert his leadership.

"The first few moments would be crucial," he reasoned. "Everybody was wondering what the new lieutenant would be like, and I would be telling them with my first words, my gestures, my demeanor, my eyes."

As a platoon leader, he worked hard at his task. From the first, he established a measure of aloofness, dealing with sanitation and other garrison matters through his squad leaders, but he quickly made clear that he would not command from a foxhole after the manner of his predecessor. Promptly ordering a step-up in patrolling, he joined the first one himself and made it a point to accompany at least one patrol each day or night.

In the end, he succeeded, but there were travails. A hospital returnee who obviously used drugs challenged him physically and would have shot him but for platoon leader McDonough's swift reaction. He had to challenge one of his more capable sergeants over the sergeant's order to shoot a man and a boy whom the sergeant maintained were Vietcong. On one occasion, he ordered two men to fill out what was essentially a volunteer patrol to enable the men to have a swim in the ocean, and those two men died in a treacherous surf.

He had, the young platoon leader told himself, "executed Spangler and Evans." He was "the cause of two deaths"; he "felt a hundred years old" and "staggered under the thought." The cost of leadership had at last risen too high. "I didn't consider myself fit to lead." But what choice had he? "The job was mine and I couldn't quit. For better or worse, I had to do it."

The author writes without bravado, with intense honesty, and, most especially, with telling introspection about his emotions and reactions.

I hope they make this book required reading at West Point, in Reserve Officers' Training Corps units, at the Infantry School, and at many other places, for James McDonough's story is what leadership at the foxhole level is all about.

I am convinced it will become a classic.

CHARLES B. MacDONALD is former deputy chief historian for Southeast Asia at the Army's Center of Military History. He is the author of several books on military history, most recently A Time for Trumpets: The Untold Story of the Battle of the Bulge.

Proconsul Role

Varied Views On Occupation

Americans as Proconsuls: United States Military Government in Germany and Japan, 1944–1952. *Robert Wolfe, ed Southern Illinois University Press, P.O. Box 3697, Carbondale, Ill. 62901. 563 pages; illustrations; notes; $27.50.*

By Col. Stanley L. Falk
U.S. Army Reserve, retired

Under the ancient Roman republic, the military governors of conquered provinces were known as proconsuls. In the territories they governed, they acted for and exercised the authority of the

consuls, the chief executive officers of Rome.

The role of the proconsuls, while initially subordinate, quickly grew in strength and independence, beyond the control of Rome. Military governors acted as they pleased, obeying or ignoring their charters at will. Some, like Caesar, grew more powerful than the republic itself.

In this sense, the title of this volume is misleading. For the American military governors of occupied Germany and Japan, while exercising considerable freedom and command prerogatives, nevertheless generally followed Washington's guidance and direction. Subject to far more stringent controls than their Roman predecessors, they raised no challenge to the ultimate source of their authority.

It should be noted, of course, that the U.S. Army never wanted to take on the role of governing occupied countries. Military government interfered with other, more traditional missions and placed heavy demands on resources better employed otherwise. Gen. Lucius D. Clay, who headed American forces in Germany, stated early and often the War Department view that military government was "not a job for soldiers." Gen. Douglas MacArthur, whom many thought ruled in Tokyo like a Japanese *shogun*, firmly declared his belief that the best occupation was a short one.

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The Editors

As it turned out, Gen. Clay remained in Germany for four years before he was finally succeeded by civilian John J. McCloy. More than seven years elapsed before the military occupation of Japan came to an end.

Despite problems and mistakes—many reflected critically in this noteworthy collection of analyses and recollections—the occupations of Germany and Japan turned out to be far more successful than perhaps anyone might have imagined. Certainly, they were more benevolent and their constructive effects more lasting than most other military occupations that come to mind.

As proclaimed by Presidents Franklin D. Roosevelt and Harry S Truman, American postwar policy would seek to strip the Axis nations of their military power and of the fruits of their aggression. It would, furthermore, eliminate the authoritarian philosophies that governed those nations, punish those guilty of war crimes, and assure the supremacy of democratic principles and guarantees of human rights.

In practice, this meant military occupation, with full political and economic control of the defeated countries. It meant disarmament and decolonization; war crimes trials; censorship; the removal of Nazis, militarists and other former wartime leaders from positions of power and influence; the breakup of commercial and industrial concentrations; and a considerable amount of educational and social engineering.

It meant, paradoxically, the use of authoritarian and undemocratic methods to ensure the end of authoritarianism and the beginning of democracy.

Also, as the tensions of the Cold War increased, it meant the abandonment of certain more idealistic goals in favor of realistic steps to counter Soviet influences and threats.

In the end, basic American objectives were achieved. West Germany and Japan emerged as strong democratic societies, with healthy economies and independent labor movements—and no trace of the militaristic and aggressive tendencies that had led them to ruin nearly half a century ago.

Most of the essays that appear in this volume were originally presented at a Smithsonian Institution conference. Contributors are former policymakers and veterans of the occupations, including Gen. Clay and High Commissioner McCloy, as well as scholars who have studied their work.

Ably edited by Robert Wolfe, who also chaired the symposium, they offer an array of analysis, opinion and recollection that is stimulating, informative and sometimes provocative. Viewpoints are mixed, ranging from critical to laudatory, but the quality of the presentations is high and the cumulative effect impressive.

COL. STANLEY L. FALK, U.S. Army Reserve, retired, Ph.D., was formerly deputy chief historian for Southeast Asia at the U.S. Army Center of Military History and is the author of five books on World War II in the Pacific. He served for two years in the occupation of Japan.

New Facts Made Public

Israel's War— One Perspective

Operation Peace for Galilee: The Israeli-PLO War in Lebanon. *Richard A. Gabriel. Hill and Wang, 19 Union Square West, New York, N.Y. 10003. 242 pages, maps; tables; index; $16.95.*

By Col. T. N. Dupuy
U.S. Army, retired

Since this is a very good book, I shal exercise the reviewer's prerogative o demonstrating that it is not perfect. Th subtitle is surprising, for in the text au thor Gabriel makes it clear that the mos serious part of this war was the conflic between Israel and Syria.

There are a few minor errors—callin Ben Gurion the first president of Israe and attributing an article in *The Jerusa lem Post* to me (Pearl S. Gefen reporte an interview with me). There is one seri ous fault: the book is one-sided and give only the Israeli view of the war.

The author says, "Since its beginnin in 1948, the Israeli army has fought n fewer than five major wars against Ara attacks, any one of which was capable c destroying Israel." I doubt if any though ful Israeli citizen or soldier would mak such an assertion.

Three wars might qualify. The Israel had good reason to believe that Gam Abdel Nasser was planning to attack the in 1967—although he probably was n —before they launched their preemptiv attack. The 1948 war would fit, and ma be 1973.

Certainly 1956, when Israel, in allian with Britain and France, attacked Egy (admittedly with some provocation) not in this category; neither is the s

ed War of Attrition of 1968–1970, are either of the Israeli incursions o Lebanon.

On the other hand, the author's bias is sely related to what is perhaps the t feature of the book. Mr. Gabriel has viously been taken into the confidence a number of senior Israeli civilian and itary officials. He thus is able to pro- e facts that have not previously been de available to the public.

The most interesting portion of the ok, and the part that will interest most fessional military readers, is the day-by- survey of combat operations. Again, s is from the Israeli point of view, but Israelis had the initiative and their ivities shaped the combat.

Also useful for the military reader and professional analyst are the statistical ails. Although the book is a bit weak its analysis of these details and in its erall analysis, the data are there, to be alyzed as the reader may wish.

COL. T. N. DUPUY, U.S. Army, retired, is a writer on military subjects and the president of T. N. Dupuy Associates and executive director of its subsidiary, HERO (Historical Evaluation and Research Organization), located in Dunn Loring, Va.

Varied Fare

An Illustrated Guide to Modern Sub Hunters. *David Miller. Arco Publishing Inc., 215 Park Avenue South, New York, N.Y. 10003. 160 pages; photographs; maps; $9.95.*

This fully illustrated "guide to antisubmarine weapons" provides brief specifications followed by more detailed technical descriptions for each entry. The author concentrates on those ships and aircraft that have antisubmarine warfare as their primary function.

Victory in Europe: D-Day to V-E Day. *Max Hastings, with photographs by George Stevens. Little, Brown and Co., 205 Lexington Ave., New York, N.Y. 10016. 192 pages; photographs; maps; bibliography; index; $25.00.*

Although noted British historian Max Hastings is the author of this text, it is primarily a photographic history of the war in Europe, with "200 previously unpublished color photographs, stills taken from films by George Stevens," put together by his son, George Stevens Jr., a film director and producer in his own right.

Claiming to be "the first and only full-color photographic record of World War II," most of the pictures in this collection focus on the aftermath of battle—destroyed buildings and bridges, the evacuation of the injured, repatriated prisoners and civilians, the meeting of Eastern and Western Allies and the celebratory smiles of victorious generals. The photographs of the liberation of the Dachau concentration camp are the most compelling in the collection.



"For our next war games, let *me* be the bad guy."



The Civil War Quiz and Fact Book. *Rod Gragg. Harper and Row Publishers Inc., 10 East 53rd St., New York, N.Y. 10022. 210 pages; photographs; bibliography; index; $15.95 cloth, $8.95 paper.*

The author has collected hundreds of facts and some trivia on the Civil War era, which make this book a breezy and delightful read for anyone vaguely interested in America's bloodiest conflict. Numerous black-and-white photographs, some familiar and others rarely before seen, are included in this question-and-answer text.

Among the entertaining tidbits of information: the battle of Cold Harbor was named for a nearby tavern which did not serve hot meals; nearly 179,000 blacks served in the Union Army at $10 a month in pay, regardless of rank; and disease, not combat, was the biggest killer during the Civil War, claiming 62 percent of the 523,000 estimated deaths.

War in Peace: Conventional and Guerilla Warfare Since 1945. *Sir Robert Thompson, consulting editor. Harmony Books, Crown Publishers Inc., One Park Ave., New York, N.Y. 10016. 336 pages; photographs; maps; illustrations; glossary; bibliography; index; $25.00.*

This is an updated edition of the book originally published in 1981. Handsomely illustrated with colorful maps and charts and hundreds of crisp black-and-white photographs, this large volume covers 31 wars, revolutions and international acts of terrorism starting with the Chinese civil war of 1945–1949. More current conflicts detailed in this text include the invasion of Afghanistan, the Gulf war between Iran and Iraq, the Falklands war, the invasion of Lebanon, the Grenada expedition and the volatile situations in Nicaragua and El Salvador.

Some Survived: An Epic Account of Japanese Captivity During World War II. *By Manny Lawton. Introduction by John Toland. Algonquin Books of Chapel Hill, P.O. Box 2225, Chapel Hill, N.C. 27515-2225. 295 pages; maps; illustrations; photographs; appendixes; index; $16.95.*

The author was a 23-year-old Army captain when U.S. forces on Bataan surrendered to the Japanese army in the Philippines on 8 April, 1942. His story of American prisoners of war surviving the Bataan Death March, months of slave labor and the shipboard ordeal of evacuations to Japan and Korea is one of courage and integrity in the face of relentless horror.

SCIENCE/SCOPE

In a historic milestone, a prototype high frequency hopping radio system has been tested successfully over several complex communications paths that were not restricted to line of sight. Frequency hopping techniques have been previously used only in the VHF and UHF portion of the radio spectrum to enhance the antijam capabilities of tactical and strategic military communications systems. The recent tests, conducted by Hughes Aircraft Company engineers under contract to the U.S. Army, covered the high frequency range from 2 to 30 MHz. They showed that antijam communications are now possible over great ranges without line-of-sight paths, which require repeater stations or satellite relays. Hughes is developing the system, called Short Term Anti-Jam (STAJ), as a retrofit enhancement kit to its existing line of U.S. military standard high frequency tactical radios.

Designed for easy installation and maintenance, a helicopter night vision system cuts life-cycle costs and downtime. The Hughes Night Vision System (HNVS) is a low-cost, forward-looking infrared (FLIR) system that provides excellent imagery and object detection in any visibility condition, day or night. The system is compact, lightweight, and totally comprised of a few interchangeable units and assemblies. Installation is fast and units may be switched between aircraft within minutes. A proven avionics interface, programmable software formats, and extensive built-in and fault-isolation testing provide fast set-up, easy modification, and simplified maintenance.

An improved submarine-launched torpedo incorporates sophisticated digital data processing capabilities in its sensor, guidance, and attack logic systems. Improvements in the MK-48 Advanced Capability (ADCAP) heavyweight torpedo include digitally based sonar and computers programmed using the U.S. Navy's CMS-2 software language. There is also a programmable signal processor with multiple microprocessors. These improvements will let ADCAP defend against a variety of difficult targets in adverse environments. Hughes, as prime contractor and systems integrator, has delivered the first full-scale engineering development model. This prototype is one of many units to be used to confirm the Navy's stringent performance and producibility requirements.

A new radar can map military targets with high resolution equal to that of infrared devices, even in rain and other bad weather. The Advanced Synthetic Aperture Radar System (ASARS-2), designed to complement electro-optic sensors, is flown on a U.S. Air Force TR-1 reconnaissance aircraft and provides real-time radar imagery to a ground station. ASARS-2 operates in all weather at ranges far exceeding the capabilities of infrared and other electro-optic devices, thanks to new state-of-the-art signal processing and other advances. The Air Force gave the system an excellent rating after it underwent strict operational performance tests as part of a "fly-before-buy" program. Hughes is producing the system under a development and production contract. Eventually ASARS-2 is expected to be adapted for tactical aircraft and mobile tactical stations.

High-energy laser pointing and tracking systems are among the advanced electro-optical systems supported by the Albuquerque Engineering Center in New Mexico. The center's scientific disciplines include physics, optics, mathematics, lasers, image processing, electro-optical control systems, and computer science. Programs involve electro-optical sensors for strategic military applications, including work performed at the U.S. Air Force Weapons Laboratory at Kirtland Air Force Base and the White Sands Missile Range. The Hughes center is expected to expand from its current staff of 42 highly trained professionals to greater than 100 over the next three years.

For more information write to: P.O. Box 45068, Dept. 72-2, Los Angeles, CA 90045-0068

HUGHES
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Troop Support Agency Chief Calls Commissary Benefit Vital

The commissary benefit was the topic of scussion during a Robert E. Lee Chapter embership luncheon held at the Ft. Lee fficers' Club.

The featured speaker for the luncheon as Brig. Gen. James S. Hayes, command-, U.S. Army Troop Support Agency, a field perating agency of the Army's deputy chief staff for logistics.

Gen. Hayes spoke about the commissary enefit—what it is, what it is up against, and hat we can do, as he sees it, to help retain

According to Gen. Hayes, the commissary enefit is the most important form of non-ay compensation, just after medical care, s cited by recent independent studies and epartment of Defense surveys.

"Commissaries save our customers mon-," Gen. Hayes pointed out. "An indepen-ent survey showed Army commissary prices ere approximately 26 percent below those comparable supermarkets."

According to Gen. Hayes, there are seg-ents of our society other than military, such s small businesses, that are supported by ommissaries.

"As valued as commissary benefits are to ctive and retired personnel and their fami-es, there are still those who believe they re a waste of taxpayers' money," he noted.

"Last year, the President's private sector urvey on cost control, better known as the Grace Commission, gave President Reagan more than 2,400 rec mmendations for cutting government costs."

Gen. Hayes said that wo of the commission's 36 task forces conc ded that the commissaries in the continen United States can no longer be justified fo economic reasons.

"It seems," Gen. Hayes obs rved, "they have lost sight of the benefit o r commissaries provide. If we were to lose our commissary benefit, it would cost the taxpayers considerably more to offset the real loss of our buying power due to the loss of the commissary's price savings."

Gen. Hayes added that overseas commissaries would be affected if U.S. commissaries were closed "because the overseas stores would not generate sufficient surcharges to support required construction and supplies."

Gen. Hayes also indicated that many members of Congress recognized the importance of commissaries and that many organizations support them.

He emphasized the importance of preserving the Army commissary. "In order to do this, we must first use the commissary. It's part of our pay. Our opponents will view any decreased sales as an indicator commissaries no longer attract customers and are, therefore, useless."

Gen. Hayes stressed the need to avoid any abuse of commissary benefits. He views commissaries as a prime contributor to the morale and well-being of soldiers and their families.

"Rest assured, we in the Troop Support Agency, who are responsible for operating your commissaries, will do all in our power to protect and preserve this vital benefit," he concluded.



Robert E. Lee Chapter. *Brig. Gen. James S. Hayes, commander, U.S. Army Troop Support Agency, discusses the commissary benefit as an important form of nonpay compensation while addressing a chapter luncheon held at the Ft. Lee Officers' Club.*



Carlisle Barracks, Pa. *Gen. Walter T. Kerwin Jr., USA, Ret.,* (second from left) *a member of AUSA's Advisory Board, presents the Association's Citation of Exceptional Service in Support of National Defense to Professor Harold C. Deutsch, U.S. Army War College, for his contributions to the professional development of the Army's senior officer corps. Observing the award presentation, which was held in conjunction with AUSA's sustaining member symposium, are:* (left) *Secretary of the Army John O. Marsh Jr.,* (second from right) *Mrs. Deutsch, and* (right) *Gerald T. Sajen, president of the Blue Mountain Chapter in Harrisburg, Pa.*

Utilities Cost Less For Texas Soldiers

AUSA corporate members led the way in central Texas in a program aimed at reducing costs for soldiers and their families who are newly arrived at Ft. Hood.

Texas Power and Light, an AUSA corporate member, started the trend last year. The company eliminated the deposit required to have electricity turned on for soldiers who present proof that they are authorized Basic Allowance for Quarters (BAQ). Lone Star Gas, another corporate member, soon joined the program, and Smith and Smith Propane Service recently eliminated its deposits for BAQ-authorized soldiers.

According to Lt. Col. Johnnie L. Murphy, chief civilian sector liaison, G5, before Smith and Smith entered the program, it required from $95 to $150 for an initial deposit.

"More and more companies are joining all the time," Col. Murphy said. "Each time a new company joins, it encourages others."

"It does take a little effort," Col. Murphy said. "The soldiers must go to the housing office on post to pick up the form. Then they have to take the form to their servicing fi-

nance office to certify they're authorized BAQ. That effort saves whatever the initial deposit might be."

The program is part of the ongoing efforts of the directorate of civilian sector liaison to further decrease the cost of setting up a household for Ft. Hood soldiers. With this program, soldiers can expect to save several hundred dollars in initial deposits.

"The AUSA chapter supported this policy from the beginning," Col. Murphy said. "The members took the lead and it all started with Texas Power and Light. Then others fell in line."

Under the conditions of the program, soldiers must pay their bills on time. According to Col. Murphy, the program shows that paying bills on time really pays off, and saves soldiers that initial deposit.

With this program, utilities get reliable customers while Ft. Hood soldiers and their families save money. The leadership and support of AUSA corporate members made it all possible.

★ STAR CHAPTERS ★

Chapters that reach their aggregate membership targets are classified as Star Chapters and will retain that status until they fail to reach any subsequent membership goal. Congratulations to the following chapters for having achieved Star Chapter status based upon the 30 June, 1985, membership targets. Chapters annotated with an asterisk were successful in achieving their 31 December, 1984, and 30 June, 1985, membership goals this past operational year. Double congratulations to them.

AFCENT Community (Brunssum, The Netherlands)
Alaska (Anchorage)
* Ark–O–Tex (Texarkana, Tex.)
* Bavarian Alpine (Munich, Ger.)
Bogardus S. Cairns (Ft. Rucker, Ala.)
* Braxton Bragg (Ft. Bragg, N.C.)
* Chattahoochee Valley–Ft. Benning (Columbus, Ga.)
Coastal Empire (Ft. Stewart, Ga.)
* Dix (Ft. Dix, N.J.)
Dwight D. Eisenhower (Palm Springs, Calif.)
Ft. Armstrong (Rock Island, Ill.)
Ft. Monmouth (N.J.)
* Gen. Creighton W. Abrams (Frankfurt, Ger.)
* Gen. Joseph W. Stilwell (Ft. Ord, Calif.)
Greater Augusta–Ft. Gordon (Ga.)
Greater Gulf Coast (Mobile, Ala.)
* Korea (Seoul)
* MG Henry G. Sharpe (Lathrop, Calif.)
Marne–Franconia (Würzburg, Ger.)
Mid-Palatinate (Kaiserslautern, Ger.)
Middle Forge (Dover, N.J.)
Old Ironsides (Ansbach, Ger.)
* Polar Bear (Fairbanks, Alaska)
Puerto Rico (Ft. Buchanan)
Redstone–Huntsville (Ala.)
San Diego (Calif.)
Southern Arizona (Ft. Huachuca)
* Southern New Mexico (Las Cruces)
Southwest Oklahoma (Ft. Sill)
* Spearhead (Frankfurt, Ger.)
Tennessee–Kentucky (Ft. Campbell, Ky.)
Yorktown (Zweibrücken, Ger.)

Ft. Monroe Not on List for Closure

Vice Chief Addresses Virginia Chapter

Army Vice Chief of Staff Gen. Maxwell R. Thurman addressed more than 400 people attending the Virginia Peninsula Chapter's annual dinner meeting held at the Ft. Monroe Officers' Club.

Gen. Thurman, who was a deputy chief of staff at the Training and Doctrine Command at Ft. Monroe from 1975 to 1977, told the audience that the Army is better today than it was in 1980 and that Ft. Monroe is not on the list for closure.

Following the address, the chapter presented cash scholarships to outstanding senior Reserve Officers' Training Corps cadets from area colleges and universities, including Hampton University cadets Andrea R. Ellis, Daniel J. Mixdorf and Sharon D. Whitehead; Christopher Newport College cadet Eric J. Todhunter; and College of William and Mary cadet Christopher O'Dell.

The Corporate Member of the Year award went to Ted C. Cors of LTV Aerospace and Defense Company. Mr. Cors has organized and cochaired AUSA programs since 1982 when he joined the chapter executive committee.

THOMAS S. CATALANO





Virginia Peninsula Chapter. *Army Vice Chief of Staff Gen. Maxwell R. Thurman presents the Corporate Member of the Year Award for 1984 to Ted C. Cors of LTV Aerospace and Defense Co., Hampton, during the annual chapter dinner held at the Ft. Monroe Officers' Club.*





Bogardus S. Cairns Chapter. *Junior ROTC cadet Cherie Wright, from Daleville High School, Ala., is graded on her performance in the individual drill competition which was held in conjunction with the chapter's 17th annual rifle and drill competition.*



Korea Chapter. *Gen. Richard H. Thompson, commander of the Army Materiel Command, receives a Korea Chapter plaque from Jung-ki Park, president of Korea Electric Power Co. and chairman of the chapter's corporate members, during a general membership meeting at which Gen. Thompson spoke.*

President Announces Membership Drive

Mid-Palatinate Corporate Members Meet

Brig. Gen. Leon E. Salomon, deputy commander of the 21st Support Command and president of AUSA's Mid-Palatinate Chapter, pledged support for an active chapter at a social get-together of corporate members held at the Vogelweh Officers' and Civilians' Club, Kaiserslautern, West Germany.

The meeting was attended by more than 60 supporters, including the chapter's 41 corporate members and their spouses.

Lt. Gen. John D. Bruen, commanding general of the 21st Support Command, was a special guest at the Mid-Palatinate Chapter corporate member meeting.

Gen. Salomon announced the chapter's goal to sign up at least 20 new corporate members during the next six months. He went on to thank the current members for the gifts they contributed to be raffled off at an awards banquet scheduled later in the year.

In appreciation for their continued support to AUSA and the chapter, Gen. Salomon presented each corporate member with an honorary membership in the Vogelweh Officers' and Civilians' Club.



Mid-Palatinate Chapter. *Dr. Helmut Milz* (right), *managing director of the Eisewerke Kaiserslautern, joins Lt. Gen. John D. Bruen* (left), *commanding general of the 21st Support Command, at a buffet in the Vogelweh Officers' and Civilians' Club.*



Northern New York–Ft. Drum Chapter. *The newly elected officers of this recently chartered chapter are:* (left to right) *Allen L. Smith, treasurer; Lt. Col. David Waite, secretary; Harold B. Johnson III, vice president; John J. Morgia, president; and Lt. Col. John K. Haack, USA, Ret., and CSM Frederick Sauer, USA, Ret., membership vice presidents.*

Chapter Notes

Virginia Peninsula Chapter. Maj. Gen. Louis H. Ginn III, U.S. Army Reserve, the Army Training and Doctrine Command's deputy commanding general for mobilization, was the featured speaker at a Flag Day–Army Birthday celebration hosted by the chapter.

Albuquerque Chapter. Mr. Dennis R. Shaw, principal deputy assistant secretary of defense for reserve affairs, discussed the equipping and training of the reserves while addressing a chapter breakfast meeting.

Mid-Palatinate Chapter. Lt. Gen. John D.

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AIMS AND OBJECTIVES

THE ASSOCIATION OF THE U.S. ARMY shall be an organization wherein all who are in accord with its objectives may join in the exchanging of ideas and information on military matters, and in fostering, supporting and advocating the legitimate and proper role of the Army of the United States and all of its branches and components in providing for and assuring the nation's military security.

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Bruen, commander, 21st Support Command, was the main speaker at a chapter dinner which honored affiliated corporate members.

Fairfax–Lee Chapter. The commander of the 3rd U.S. Infantry (The Old Guard), Col. William R. Williamson, discussed the Military District of Washington's "Spirit of America" pageant at a chapter luncheon held at the Springfield Hilton.

Des Moines Freedom Chapter. The commanding general of the U.S. Army Forces Command, Gen. Robert W. Sennewald, discussed the Total Army's readiness to field and sustain an effective fighting force at a chapter dinner meeting held at Camp Dodge recreation hall.

Mother Lode Chapter. Hon. John O. Marsh Jr., the secretary of the Army, gave a status report on today's Army as he spoke to a chapter dinner meeting.

Arizona Territorial Chapter. The chapter and the Military Affairs Committee of the Phoenix Chamber of Commerce were given a briefing by Col. Larry Stellmon of the U.S. Air Force Thunderbirds.

Greater Augusta–Ft. Gordon Chapter. The chapter hosted an allied student night for 100 allied students from 29 countries. The chapter also sponsored its annual "Beat the General Run." More than 8,000 runners participated in the event with proceeds to fund chapter activities for the coming year.

AUSA–ROTC Company Notes

VPI Company (Virginia Polytechnic Institute and State University). The Virginia Tech Corps of Cadets held its annual military awards ceremony, and a special plaque honoring V.P.I alumni who died during the Vietnam conflict was presented to Cadet Col. Joseph Moore, the Virginia Tech Corps of Cadets regimental commander, by Cadet Capt. Gary D. Boward, who was assisted by Air Force ROTC Cadet Michael R. Mabry.

The Vietnam Memorial plaque was first proposed by AUSA member 1st Sgt. O. Thomas. Cadets Boward and Mabry put the project into motion by initiating the necessary research, arranging for the award to be produced and raising the funds needed. The plaque is now displayed in Brodie Hall, one of the cadet dormitories.

Lt. Charles T. Dyce Company (Renssalaer Polytechnic Institute). The company recently visited the 464th Engineer Battalion for a tour of their facilities. The cadets received a briefing on the unit's status and readiness to deploy to Europe. After the briefing, cadets inspected the weapons room and received a briefing on weapons security, maintenance and acquisition.

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ARMY
The Magazine of Landpower

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Features

22 **Men of Character, Principles of Honor?**
The Army only gives lip service to having high regard for integrity when members countenance anything less than complete candor in such areas as career advancement. A newly retired officer recalls instances in which ethical principals were bent or ignored. **By Col. William P. Boyd, USA, Ret.**

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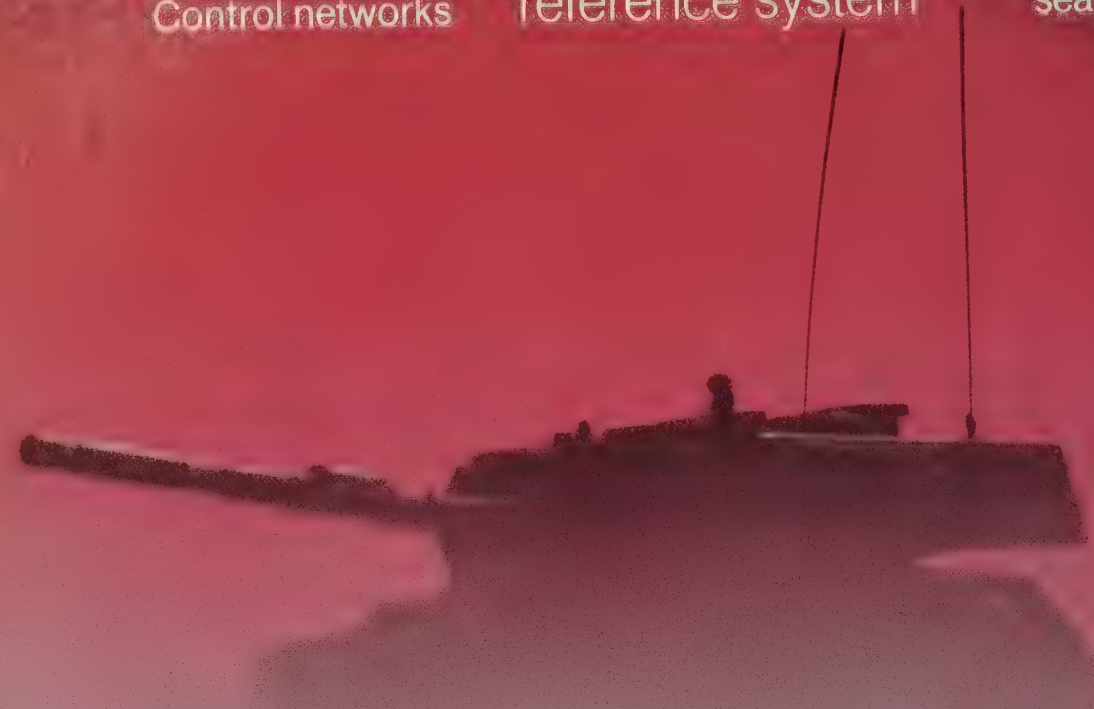
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The Light Infantry: Comments and Better Ideas

■ "The Light Infantry: Indispensable ement of a Balanced Force" (June) by en. William E. DePuy, U.S. Army, re- ed, is a cathartic dose of balanced good nse in an atmosphere that increasingly rges on the polemic. Everyone wants e biggest little "compact" on the mar- t.

However, Gen. DePuy's emphasis on the ooded "Wildflecken Triangle"—which would have the West invest with light fantry to thereupon constitute an em- rrassment to an invading enemy trying slide by in adjacent open valley corri- ors—raises some issues that may have en overlooked.

Letters

The initial moves of any surprise attack NATO or, indeed of any surprise at- ck, must always be assumed to have the lvantage of planning regarding means, ne and place. Some early success seems evitable.

NATO surveillance is probably good ough to give warning of any but the eliminary moves. But these successful eliminary moves may serve to frustrate action to this very warning: for exam- e, the countermove to get NATO's light fantry into Gen. DePuy's woods. He sumes a nonnuclear engagement, of urse.

It is widely assumed that one early ove that is possible without any warn- g and with few defensive countermea- res up to now is vertical envelopment border zones by airborne or air as- ult units. It would appear to be a pre- ctable opening gambit.

Conventional wisdom sees this open- g move as having goals that are exclu- vely nodal points of the infrastructure, hich the attackers would hold or de- roy and otherwise make general nui- nces of themselves for a few brief and ely moments.

Yet, if Gen. DePuy has his sums right, e main weight of this preliminary at- ck may go toward investing these for- ts to deny them to NATO's light infan- y to whom they have been "assigned."

The commonly overlooked fact is that stretch of forest can constitute a sanc- ary corridor for low-flying aircraft of l kinds. Helicopters would find it par- ularly useful.

To disgorge their troops, helicopters ould slide off to the left or right of the rest at the end of their scheduled flight the first clearing. The troops would en move back into the forest. From the



edge of the forest, aggressive patrolling could expand the air sanctuary of the forest another couple of miles on each side.

To the extent that a forest might extend perhaps 50 miles into NATO territory, attacking aircraft destined anywhere have a 50-mile free journey. The few clearings available for air defense installations might be kept unavailable by a few men with mortars and light arms.

The counter to this preliminary vertical envelopment for the moment would appear to be the Stinger missile. Laager all the tanks you want 100 miles back, but Stinger teams must be kept well forward around the clock. And Stinger missiles must somehow be elevated to command the forest canopy. There surely must be a way.

R. P. Johnson

Tacoma, Wash.

■ The article by Gen. William E. DePuy, U.S. Army, retired, entitled "The Light Infantry: Indispensable Element of a Balanced Force" (June), seems to have stated the obvious and glossed over the critical item.

The obvious is that a light infantry unit in its preferred environment is going to do well. I thought that was the idea behind different divisions in the first place. You would expect problems with an armored brigade in a jungle swamp against a light force; you would expect problems with a light infantry force on the Kansas plains against a mechanized force.

The critical item is overall firepower for a light infantry division. If the concept is to move a self-sustaining division to a given location in 478 C-141B sorties, then no division meets that criterion. The support slice from a higher headquarters must come with the unit.

If, as an example, we were to send the 7th Infantry Division (Light) to occupy Beirut International Airport to prevent its use as a hostage site (i.e., require the hijackers to land in a country with a government that can be held accountable if things go wrong) and West Beirut has to be cleared of various armed militias, the 7th can't do it alone. If they require a Marine amphibious unit or brigade for armor or artillery support, what is the advantage of the 7th versus the 82nd Airborne Division? The 82nd could at least drop troops on and around the airport to allow the Marines time to get ashore to control the airport so that more troops and supplies could be landed.

The lack of antiarmor weaponry is the Achilles heel of all nonmechanized forces. Without squad-level organic ability to engage and defeat or delay armored vehicles at a kilometer or better, no infantry force can hold terrain that is other than marginal for armor operations, anyway. A multishot, dual-purpose, hypersonic kinetic energy rocket with an impact-armed, millisecond-delay fuse detonating a 0.25-pound charge of C-4 that was fired from a modified M202A1 flame weapon launcher would give troops a cheap, effective round of ammunition mounted in a four-shot "clip" that could be used against most targets facing a light infantry force. This suggestion is now being evaluated through channels.

The basic enemy formations we would face are Soviet style. Guerrillas and urban bandits operating in packs, like the New People's Army in the Philippines and Lebanese Amal and Hezbollah groups, are the ideal enemies for light divisions, which are in essence "bandito hunting" operations, to quote from another article on the subject. In those instances, light forces operating as hunters can hound any small force into a kill zone or wipe them out with their organic arms.

Air and artillery fire support could do what Gen. Creighton W. Abrams did in Vietnam, with the helicopter-borne forces used to pile on located enemy units. Without these or equivalent situations, light forces will be relegated to limited areas. Gen. DePuy's contention that light forces would be valuable in the Wildflecken area looks nice, until the Soviets hit the area with persistent chemicals and insert their own heliborne forces to control the key trails for an armored unit crossing.

Lack of mobility and firepower limit a light infantry force in relatively open areas. Add to those items the burden of

carrying those heavy packs, and the limitations become more pronounced. Give these same squads the organic antiarmor firepower described above, and you then make them the bane of an armored force's existence. Without that organic man-portable firepower, you doom good troops to defeat against heavy forces in the open or consign them to chasing guerrillas in the jungles and fanatics in cities.

MAJ. LARRY A. ALTERSITZ
Woodbury, N.J.

■ How very interesting to read the article by Gen. William E. DePuy, U.S. Army, retired, ("The Light Infantry: Indispensable Element of a Balanced Force," June) on light infantry and its plea for an effective *and* portable antitank weapon.

Over a year ago, I used the Army's suggestion system to send up a suggestion on this very matter. I have yet to have the courtesy of a reply.

My present way of getting the Army's attention is partly the U.S. Patent Office. I have spent a few thousand dollars to apply for a patent on my idea which restores a more normal angle of incidence to the antitank missile as it strikes the inclined frontal armor of the modern tank, and the Army can jolly well classify the patent as "secret" and pay royalty fees when it comes to their attention.

BRIG. GEN. PAUL J. KOPSCH
U.S. Army, retired
Lorain, Ohio

■ There has been a lot of discussion about the merits, drawbacks and possibilities of light infantry on a modern battlefield. Seems to me someone should study the operations of the 1st Special Service Force, which was as light as one could manage, and managed to entertain some fairly tough Germans here and there, especially at Anzio, where the force held a large area and kept their Teutonic neighbors busy most of the time. In the passage of time, the force managed to get field artillery and armor attached, but even when all they had were organic weapons, they were a tough nut to crack.

They were a selected group and had some high-grade leaders, one requirement which no one should lose sight of. Mediocre men can do things when their leaders are high grade.

What matters is not the size of the unit or the modern technology, but the minds of the leaders and troops.

JOHN P. CONLON
Newark, Ohio

ARMY invites letters to the editor. The subject matter may be about material that has appeared in the magazine or about any topic which the writer feels would be of interest to ARMY readers. The editors reserve the right to edit letters for reasons of style, accuracy or because of space limitation. All the letters must be signed, and while we prefer to carry the writers' names we will consider requests for withholding them if there is a compelling reason to do so.

The Editors

Rebuttal Rebutted

■ I have read with considerable interest, and some sorrow, the letter to the editor in the June 1985 issue of ARMY in rebuttal of my article in the March issue entitled "Criticisms of Combat Models Cite Unreliability of Results." My sorrow is due to the fact that I had no quarrel with the authors of the letter, Dr. George Miller and Dr. Seth Bonder, and in my article had in fact characterized them as "two highly respected scholars from one of the best-known and most respected think tanks in the United States."

Unfortunately, I now do have a quarrel with them (but quite an impersonal one) because, in their efforts to justify a study they did for the Army Research Institute for the Behavioral and Social Sciences (ARI), they have misrepresented and distorted what I said about their report in my article. They force me not only to point out that nothing in their lengthy response in any way refutes anything I wrote in my article, but also to set straight the record their letter endeavors to confuse.

My comments on their report for ARI entitled "Human Factors Representations for Combat Models" made several points. (I did not, however, apply to their study, or to the models they used in that study, either of the criticisms which Dr. Miller and Dr. Bonder quote in their letter and assert—quite incorrectly—were so applied by me.) My points were:

■ In the introduction to the study, a senior ARI official stated that it was commissioned because "human factors are not well represented in simulations of combined arms combat."

■ To improve this situation, the study examined the manner in which nine (or two, the report is not quite clear) models represent human factors, and subjected them to a highly theoretical sensitivity analysis.

■ No effort was made in the study to compare the manner in which the models handled human factors with human factors in actual real-world combat experience.

■ The study merely restructured the manner in which human factors are represented in existing models (even though these were already condemned by ARI as unsatisfactory) to provide an "improved" method of representing human factors.

■ This procedure confirmed the earlier cited criticisms of the current unscientific processes of the existing analysis system related to combat models.

In their letter, Dr. Miller and Dr. Bonder totally ignore these criticisms, leading me to assume that they cannot rebut the theme of my article, either as it relates to models in general or to their ARI study in particular. Instead, their letter chides me for not mentioning published reference to a validation study performed by their organization for one of their models. More than half of their letter is devoted to a general description of this validation study.

I would not have thought of referring to that validation study, mainly because of its irrelevance. If, however, there had been reason, I still would have been reluctant to refer to it, since I have not had a chance to see it, and I have heard from others (who have seen it) that the validation is very questionable because of the manner in which the data were forced to fit the model. It would have not been fair for me to say this had Dr. Miller and Dr. Bonder not raised the issue themselves in their letter.

In conclusion, let me respond to the two specific questions which Dr. Miller and Dr. Bonder posed to me in their letter.

Do I "agree that decision-making aspects of command-control and intelligence are among the highest priority areas for behavioral model research"? I most certainly do, but I insist that such research is meaningless (and thus worthless) unless related to the real-world performance of real-world people.

Do I suggest "that the use of . . . historical data [such as used in their validation study] in defense analysis constitutes 'a grave threat to our national security' "? It is obvious that my article's reference to threats to national security (in no way related to their study) was in terms of the general failure of most of our models to use historical data. As to their data in their study, I cannot comment. If the data was questionable, or if it was misused in order to "validate" a model not otherwise validated, it could indeed constitute such a threat.

COL. T. N. DUPUY
U.S. Army, retired
Dunn Loring, Va.

'Talent Banking' Can Be Risky

■ A talent bank, as described by Maj. Michael L. McGee in his article "Getting the Experts' Input Through 'Talent Banking' " ("Cerebrations," June), would contribute greatly to the input of information to unauthorized personnel and possibly Soviet intelligence defense information. The listing of names and the addresses of key personnel with expertise in specific areas should eliminate much legwork for intelligence experts, both friendly and unfriendly. The type of information that Maj. McGee wanted to be made available to his home computer should be considered "official use only."

Keeping military information in the nds of the military has become an in- easing problem with the home comput- age. Any hacker worth his salt would ve to access a program such as the one ggested by Maj. McGee. It would be n open invitation for hobbyists to ac- ss data which would not be their privi- ge to view. The "need to know" philos- hy would indeed be violated even if e program was protected by passwords. authorized personnel could have home mputer access, it would only be a mat- r of time until unauthorized personnel ould have a field day.

The basic premise of Maj. McGee's ar- le does have merit; however, the devel- oment of an easy access system needs vamping. Even existing computers on ilitary installations must be inspected r electronic emanations and access con- ol to prevent unauthorized entry.

ELAINE M. THORNE
ayetteville, N.C.

hat the SS Did

■ Col. John A. Buesseler, M.D., wrote thoughtful, nonpolitical prescription r healing the Bitburg–*Waffen SS* syn- ome ("Letters," June). The letter took ght column inches. The editor answered 30 inches of "never-again" *Vernichtungs- uer*, presenting exactly the politicized etoric Col. Buesseler deplored.

The editor's note also contained a mis- presentation by juxtaposition. After re- rring to the German Death's Head or- nization, a few words later the transla- on of *SS Verfügungstruppe* is offered : "literally, 'troops for disposition.' " terally true, but the close association ves the image of extermination. The ilitary meaning is "at the disposal of he leader]" not "for the disposition of olocaust victims]."

All soldiers who submit to the civilian thority of their nation by disciplined obedience are worthy comrades in the profession of arms. Those who die doing so are worthy of honor by all their comrades of all nations. I am sorry an editor of ARMY does not see the importance of this nonpolitical kinship of all soldiers of history and the future. We have little else to make the profession worthwhile.

LT. COL. B. B. SMALL
U.S. Army, retired
Sunnyvale, Calif.

■ In my opinion, the editor's note in response to the letter on the *Waffen SS* (June) was necessary to point out again what the *SS* did.

I thought that your editorial comments were responsible, authoritative and cogently expressed, and you are to be commended.

COL. JACK L. BLOOM
U.S. Army Reserve, retired
Greenville, S.C.

■ Congratulations on your well-researched, balanced and scholarly refutation of the views offered by Col. John A. Buesseler, M.D., in defense of the *Waffen SS*.

I hope that Dr. Buesseler's practice of medicine is based more on fact than is his short-sighted, obtuse understanding of history.

COL. LARRY R. WILLNER
U.S. Army, retired
McLean, Va.

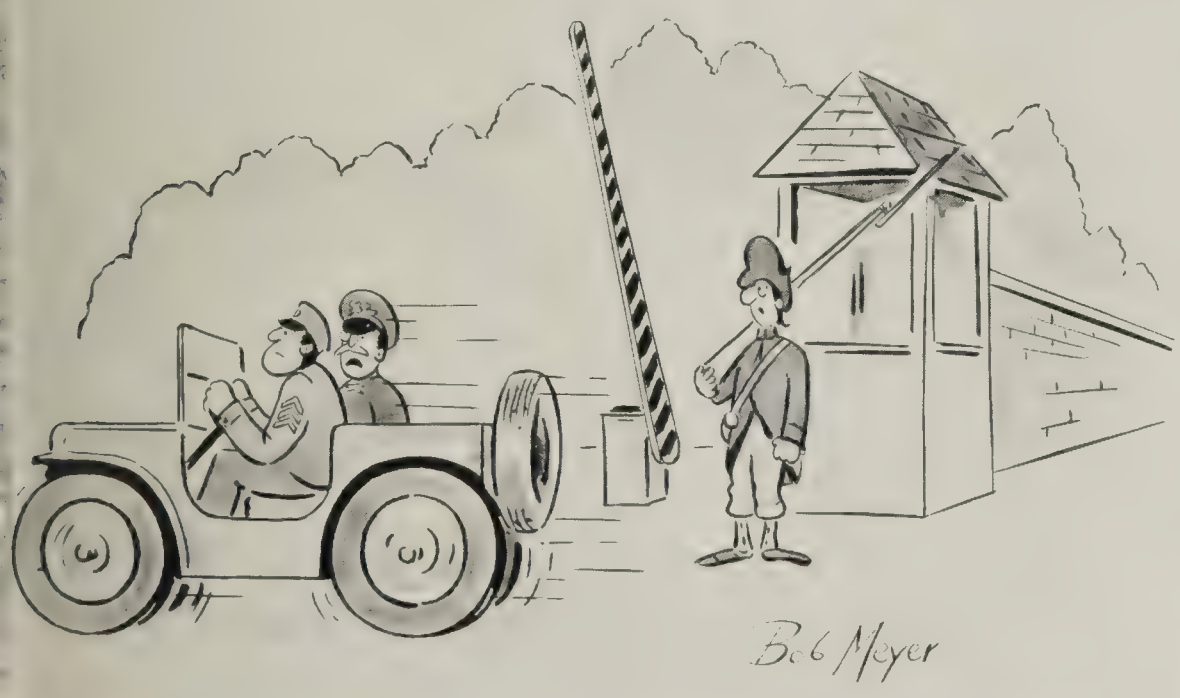
Questionable Reasoning

■ Rep. Ike Skelton's article on Central America ("Central America: A Whole New Set of U.S. Concerns," May) contains valid insights. It is a bit troubling, however, that his method of presenting the case for increased U.S. involvement, like that of the present administration, contains the kinds of circular arguments, double standards, random usage of poorly defined terms and internal inconsistencies that no high school debate club advisor would tolerate.

The shame of Munich is raised early in the article to show that "appeasement only encourages dictators." Then, President Jose Napoleon Duarte of El Salvador is lauded for negotiating with rebels in that country, and Nicaragua is condemned for failing to do the same.

One can only wonder whether President Duarte is perhaps aware, more than anyone in the U.S. government, that the Salvadorean rebels are the military arm of the Democratic Revolutionary Front/Farabundo Marti National Liberation Front (FDR/FMLN), a broad-based though by necessity clandestine political movement. One can only wonder whether the Sandinistas (and it is *so* hard to identify a strong individual in that particular dictatorship) are perhaps aware, more than anyone in the U.S. government, that the "contras" are not a political movement at all. The rationale for funding them, after all, has changed so many times that one can't help but be confused over what they stand for. The word itself means only "against" in English.

The argument over legitimacy and who should be negotiating with whom is further weakened by references to the electoral process. In Nicaragua, Rep. Skelton



"Just out of curiosity, sergeant, how often do you change the guard?"

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epicts Arturo Jose Cruz as "the only enuine opposition figure." He refused to articipate in the elections because he could not get assurances of freedom of ovement, assembly, and equal access the media." These are expectations sually voiced by participants in the elecral process of a developing democracy.

In El Salvador, on the other hand, votng is mandatory, and those who break overnment decrees are labeled "subverves," more often than not ending up a loody pulp on the roadside. For this eason, it is hardly convincing to include picture of a crowded polling station, as done in the article, as evidence of deiocracy at work.

The FDR/FMLN refuses to participate the electoral process because too many f its political leaders have been murered already. Roberto D'Aubuisson of ie National Republican Alliance has delared that "there is nothing to talk about" ith the FDR/FMLN, and the courageous entrist Duarte has himself been labeled n extremist by the far right. One can nly wonder how tolerant they would be bout the participation of the FDR/FMN in an election. When Former Ambasador to El Salvador Deane Hinton, who nce declared to the rebels, "If you're so amn good, then come back and see how any votes you can get," finally realized is and spoke out about it, he was quick- out of a job.

This state of affairs makes Rep. Skelon's argument ring hollow in the ears of any thoughtful Americans.

Rep. Skelton declares that the Sandiistas' power "comes from the barrel of gun." However, when the population ent on full alert in November of last ear, with sonic booms from U.S. aircraft shaking Managua for several morngs in a row, Washington ridiculed the ct that there were so many smiling peole carrying weapons and that children ere playing on tank turrets. If power omes out of the barrel of a gun in Nicagua, one can only conclude that power literally in the hands of the people.

The congressman laments the "new alrnative foreign policy establishment," en lists the groups of which it consists. the process, he names just about everyne who has firsthand knowledge of the gion, including academics who know atin America intimately, advocates of ternational human rights groups that nduct impartial studies of the region nd church groups that have direct links ith both Catholic base communities and ie Catholic hierarchy in the region.

This latter group includes Reserve milary officers who have contributed to an wareness of national security considerations in the region for the church groups, ut who nonetheless have, in some cases, signed their commissions in view of their firsthand knowledge.

The U.S. government, pressured by the "alternative foreign policy establishment" that Rep. Skelton laments, has moved away from supporting any dictator who claims to hate communism to making a concerted effort to promote democratic reform in Central America, avoiding the extremism of the far left and far right. The U.S. government is finally realizing that such a policy is in the nation's long-term interests.

The problem, as all will acknowledge, will not be resolved in the short term. It is my hope, however, that it can be resolved rationally, without resort to circular arguments that damage credibility.

I am proud to be a citizen of a nation that allows me to so strongly rebut the argument of a U.S. government official while serving as an Army reservist. However, my purpose here has been primarily to identify the reasons for disagreement and the wide credibility gap in U.S. policy planning for Central America, rather than to argue in favor of my own point of view. I hope that, in doing this, some small progress toward a greater consensus in national security planning can be made.

SP.5 KEVIN B. STAFF
U.S. Army Reserve
Sapporo, Japan

■ In his article, "Central America: A Whole New Set of U.S. Concerns," Rep. Ike Skelton demonstrates the ability to recite the lessons of history without being able to apply them. In the opening paragraphs of his story, he cites British Prime Minister Neville Chamberlain's sellout of Czechoslovakia for a worthless promise from Adolph Hitler as "the key lesson for the generation that came to maturity during the 1930s." He goes on to say that "isolationism does not guarantee peace" and "appeasement only encourages dictators." These sound like the words of a man who does not believe in selling out allies, an isolationist policy for the United States or the appeasement of dictators.

I was very pleased to read that Rep. Skelton shares my view that "one of the ugly legacies of Vietnam is that the use of U.S. power is a source of evil." He even boasts that he has been "a strong supporter of the 'contras' in their fight against the Sandinista government." However, I have to question what form that strong support of the freedom-fighters in Nicaragua has taken, beyond publicly claiming to support them.

In October 1984, Rep. Skelton supported a congressional move to suspend a decision on aid to the freedom-fighters "in an attempt to encourage the Nicaraguan leadership to opt for free elections." In my view, this is nothing more than the appeasement of a dictator. This attempt to send a "positive signal favoring democracy" to Nicaragua was rewarded with the continuation of a military build-up made possible by the equipment of the Soviet Union and training by thousands of Cuban combat troops.

Rep. Skelton even admits in his article that the Sandinistas "did not take advantage of this opportunity." I would argue that the Sandinistas took complete advantage of this "opportunity," in a way wholly consistent with the communist dictatorship that they are. Namely, they used this "opportunity" to continue to consolidate their power, power that, as Rep. Skelton himself admits, "comes from the barrel of a gun."

The vote on $14 million in "humanitarian aid" to the freedom-fighters—a vote which Rep. Skelton helped postpone—has come and gone, and Rep. Skelton was one of those helping to defeat it. This latest appeasement of Nicaragua's dictator Daniel Ortega was rewarded by his trip not to the United States to thank Congress by making some worthless promise, but by a brazen act of contempt for our Congress by his traveling to the Soviet Union, in the finest traditions of a feudal homage, to accept his reward of *further increased* aid from the Soviets.

If Central America really is crucial to American security, as Rep. Skelton says it is, then $14 million in aid for the freedom fighters is far too little and should only have been opposed on the grounds that it was too modest. But that is evidently too much to ask of a Congress too timid to exercise U.S. power.

I would like to make the point that we have now sent a strong, clear message to the Soviets and their dependency, Cuba, namely, that the Monroe Doctrine is dead and that this once-great power no longer has the will to take even meager action to defend its "crucial interests" in its own front yard. The message is that we are going to lie down and die regardless of how contemptuous our opponent, how close to our borders, or how subordinate our opponent is to the Soviets.

It seems Congress has lost its will, or perhaps it would be more appropriate to say that it never regained it. And loss of will is the beginning of the end.

CHRISTIAN GRAVES
Monterey, Calif.

Specialist Grades Defended

■ One of the real advances in the Army in the past 30 years or so was the introduction of specialist grades. Although this nonleadership grade structure has wrongly been tampered with and weakened, it is still half a loaf. Now I learn from "News Call" (May) that this system will be further emasculated by eliminating grades five and six (leaving only grade

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The architecture of information may be as critical to its usefulness as the information itself. Orchestrating the flows of information between processors is a demanding art. Interfacing numbers of computers, some in distant locations, to satisfy varying specifications and requirements is a part of the design process which can make the difference between system success or failure.

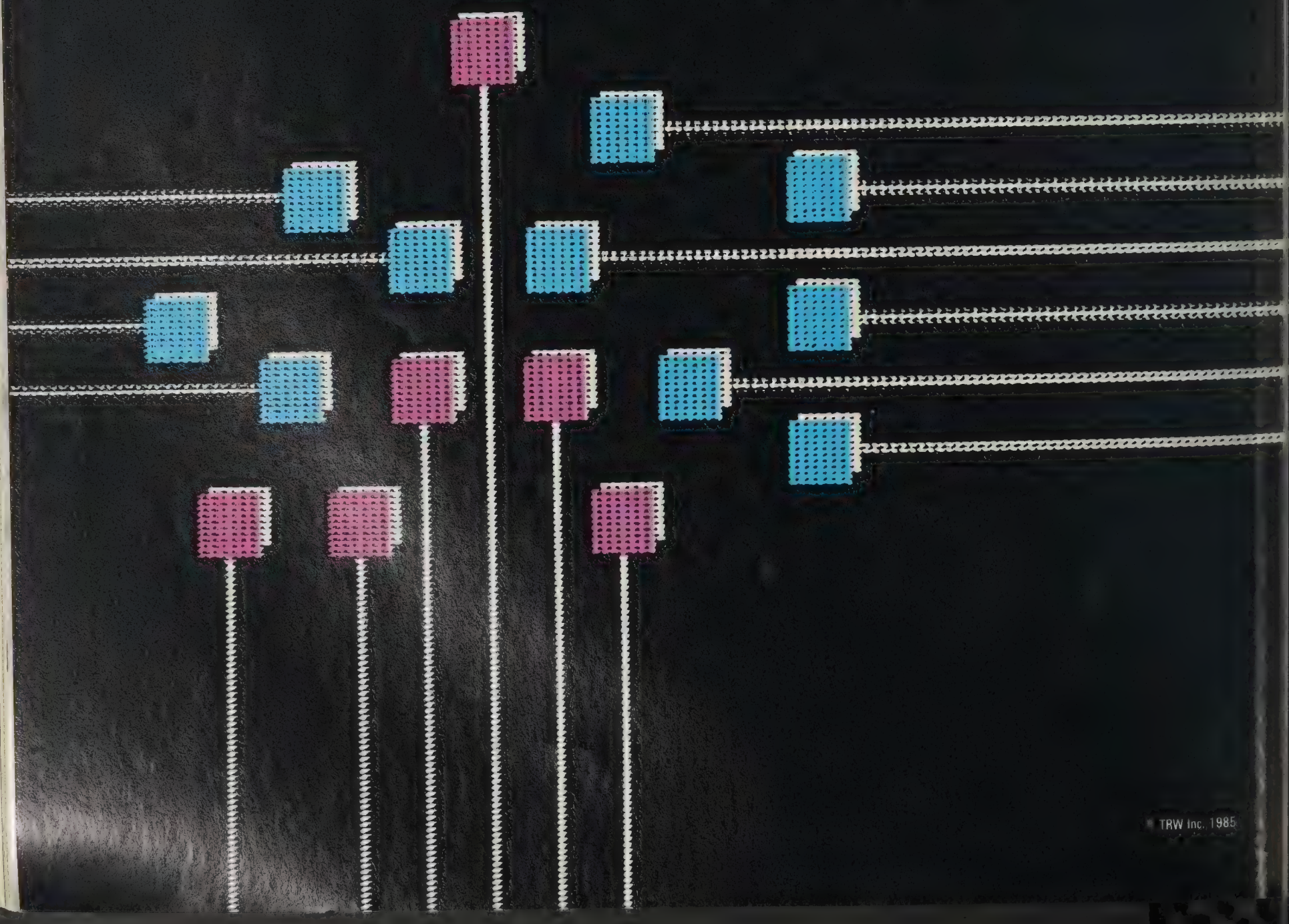
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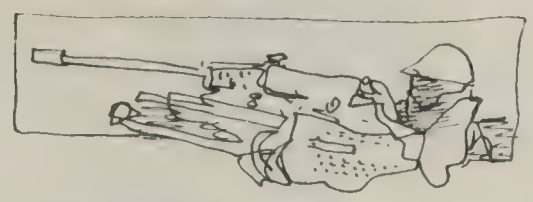
TRW Defense Systems Group



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ur, and that with a precarious future). Concerning the purpose of specialist ades (not rank, as was indicated), what as reported is only partly true. The ost important benefit of these grades is enable those in certain nonleadership sitions to advance to an appropriate y level without having to classify them leaders (such as the technical grades of orld War II). It was not intended for reer soldiers to remain in the specialist ld permanently if they have leadership ility and aspire to leadership positions. When the specialist program was insti- ted, it gave a dramatic boost to the estige of NCOs by making them part of more exclusive and professional group. fore then, NCOs were embarrassingly merous, and many of them lacked lead- ship qualities.

The new grades also alleviated a gross equity in work load by increasing the mber of soldiers available for fatigue ty and for other tasks not befitting COs. As an example, after specialist ades were instituted, one of five tank ewmen was or could be a sergeant; wever, before that the ratio was three five (and with the recent decision it ll soon be an astonishing three of four). is meant there was a surfeit of those gible for sergeant of the guard while ose pulling private of the guard met



themselves coming off duty. And so it went with all other soldierly requirements.

Now we are to go back in time, largely at the instigation of TRADOC (Training and Doctrine Command). Their stance is based on a "study group" that appears to have been less than objective and thorough. To top it off, their examination of the issue "culminated in a meeting of 35 TRADOC command sergeants major." Their title is somewhat of a misnomer, as they do not have command responsibilities. That means they will not have to contend with the consequences of this ill-advised act.

The ones who should have been consulted on such an important matter are those who have command obligations and are senior to CSMs—platoon leaders and company commanders.

The super grades program, of which this committee of highly graded enlisted men is a part, is the one that cries out for correction. Super grades were devised to fill a very limited need, but inflation and misunderstanding have ruined the program. We have E8s and E9s ensconced in every nook and cranny. They have established a separate power base and their actions often subvert the chain of command. Unbelievably, there are high-ranking officials who view them as senior to junior officers and at times even field grade officers. We have created a Frankenstein. Drastic, and I do mean drastic, surgery is in order.

I fail to see any benefit to the Army in giving nonleaders "hard stripes" (as we say down at the motor pool). The harm is obvious. The nonsensical rationale and comments quoted in the article only reinforce my contention. What we should be doing is strengthening the specialist system, not tearing it down.

The sad part is we are taking a step backward that will cause untold hardships and problems until the situation is inevitably changed.

COL. T. G. QUINN
U.S. Army, retired
Radcliff, Ky.

Engineers' Correction

■ The purpose of this correspondence is to bring to your attention an obvious error that I am sure was unintentional; nevertheless, it is of concern to the 18th Engineer Brigade.

Your March issue (Page 36) had a picture of a soldier and his grader from the 293rd Engineer Battalion involved in snow

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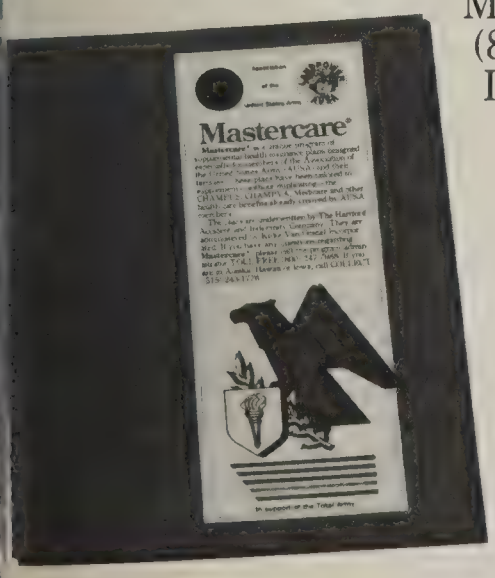
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AR59

removal. This we appreciate and enjoy immensely. Anytime someone takes the time to recognize our soldiers and their units, we of the 18th Engineer Brigade feel personally gratified. The only problem is the caption that went with the photo read, "the 293rd Engineer Battalion (V Corps)." The 293rd Engineer Battalion is not a V Corps unit. It is an 18th Engineer Brigade unit directly under U.S. Army, Europe.

I really enjoy ARMY magazine and the great articles and hope to see more of our outstanding soldiers being recognized by your staff.

CSM HAROLD A. THOMAS
APO New York 09164

Misunderstanding the Problem

■ A fine-looking American lady with striking Celtic coloring approached me at an official party in Washington, D.C. After I had answered her inquiry about my uniform, she said, "Oh dear me. If you are in the British Army you'll likely hate me—I'm of Irish descent." If her remark surprised me, my retort certainly astonished her.

I said, "No madam, we in the British Army generally love Ireland and admire the Irish; after all, a large number of our soldiers have lost their lives defending Irish people against terrorists, and thousands of Irishmen have served voluntarily with the British Army."

That short exchange underlined the depth of misunderstanding that sometimes exists between a few people in our two countries over the Northern Ireland problem. Loose comments such as that made in Paul Moorcraft's excellent article, "Bloody Standoff in Afghanistan (April)," also do not help. He compared the Soviets' ability to hold Afghanistan militarily with the British Army's "control" of Northern Ireland. Mr. Moorcraft, himself an Englishman, should be better acquainted with the role of British forces in the province. It is simply to support a hard-pressed police force, only when requested, to combat a small but ruthless revolutionary Marxist terrorist "army" whose aims and methods emphatically lack widespread support both north and south of the Ulster border.

Far from "controlling" Northern Ireland, the British Army has never even enforced a curfew, not even during the worst of sectarian street violence in the early 1970s. Far from the British Army being agents of "oppression" or of an "occupying power," they have earned the respect and admiration of the vast majority of the population through even-handed professionalism and restrained support of law and order. Few armies in the world would exercise so much patience and restraint over the years as that of the British. In defending a democratic society against terrorist violence, the British Army has taken many casualties, but 70 percent of the Irish Republican Army's victims have tragically been Irishmen, many of them Catholics.

The British Army will doubtless remain in Northern Ireland in small numbers as long as the province remains part of the United Kingdom, just as garrisons are stationed in Scotland, Wales or England; and Northern Ireland will remain part of the United Kingdom as long as the majority of its inhabitants want it to be. At present, the majority see no more reason for Ulster to be joined to Eire than Alaska should be surrendered to Canada. It would certainly help the police on both sides of the Irish border if more Americans understood this. Thankfully, most members of the splendid U.S. Army that I have met in my time in this wonderful country do understand and appreciate the part their British brothers in arms try to play in combating terrorism wherever it arises.

COL. N. M. PUGHE
British Army
Washington, D.C.

Walking Tall

■ I finally had time to catch up on my reading and came across retired Army Col. Irwin M. Jacobs's article "Strengthening Leadership Ethic" ("Front & Center," March) in response to Capt. Ralph H. Peters's article "Leaders and Managers: Rewards Out of Balance" (August 1984). I dug out the August 1984 issue and reread Capt. Peters's article, once again marvelling at his grasp.

Memories held sway of being given command of a headquarters company of a military intelligence battalion in 1960 before there was a military intelligence branch; I was a relatively junior 1st lieutenant, and the table of organization and enlistment was field grade. It was a truly great year as I walked through "my" barracks, "my" supply areas and "my" motor pool and saw "my" troops doing their damnedest.

Segue to 1978 and a retired military intelligence major as senior assistant manager of a hotel . . . walking the 28 floors and watching and learning from the 600-odd employees. Later, I was surprised to find that many of the employees I observed thought I was the "Big Kahuna" since no one else in coat and tie walked around to see what they were doing.

A shorter passage to even more recent times, and I am walking around a $33,000,000 property to "get the feel" of the property and the people as general manager. This time I was the "Big Kahuna." At about this point, a best seller was advising us to search for excellence through MBWA (management by walking around), and I found that what I was encouraged to do as a novice company commander was suddenly in style.

Col. Jacobs's comments concerning today's junior officer/commander who is denied that precious time to walk around struck home. As I am sure Capt. Peters will confirm, the commanding officer who makes the time to MBWA will find his fears and doubts are greatly eased—he will know his most valued resources and, perhaps more importantly, they will *know* he knows.

The battalion commander who took a chance on the 1st lieutenant in 1960, who let the novice learn by making textbook mistakes and who turned away several higher-ranking officers hoping to get their company command tickets punched, was a hard-charging armor lieutenant colonel named Ralph D. Peters. If Capt. Peters is related to him, he comes by much of his savvy naturally.

MAJ. WILLIAM J. WARD
U.S. Army, retired
Lahaina, Maui, Hawaii

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Misapplied Proposal Regulations Hurt Defense Efforts, Business

By Col. T. N. Dupuy
U.S. Army, retired

"If we don't have provisions for unsolicited proposals for research, then we have effectively cut the government off from the civilian intellectual community."

The speaker was a mid-level government employee, a military scholar who administers an important research program for the Department of the Army. He is planning to resign from his government job just as soon as he can do so with minimum damage to his research program.

Front & Center

The reason for his statement is also the reason he is planning to resign. He is frustrated by the effect that the Competition in Contracting Act of 1984 (public law 98-369, 18 July, 1984) is having on him, his research program and private research companies and individuals whose competence and work he respects. But his greatest frustration and concern is that the U.S. defense effort has been seriously damaged by the unintended effect of this legislation.

I am proud and honored to be included among the people whom this fine man respects. I am the principal executive officer of a small company that may soon be put out of business by the manner in which the Competition in Contracting Act of 1984 (CCA-84) is being implemented by the executive branch of the government.

The occasion of the statement quoted above was a visit to my office by this government employee to tell me why he was unable to process an unsolicited proposal that my company had submitted to his agency some weeks previously. He liked the proposal; it was ideally suited to his research program. It reflected a unique combination of competence and experience in the subject it dealt with. It was needed. But he is prevented by new regulations, based upon executive agency interpretation of CCA-84, from accepting any unsolicited proposals.

If he decides that a proposed piece of research, conceived and planned by a creative organization with specialized knowledge, should be carried out, he must use the proposal as the basis for a "Request for Proposal" (RFP) and invite all interested people and firms to bid on it. He is prohibited from awarding any "sole source" contract—that is, any contract which has not been opened to competitive bidding. My visitor put it this way:

"We have rules and regulations which state that an unsolicited proposal is the property of the proposer, and we take tremendous precautions to keep his proposal confidential. Then, under these new regulations, we are forced to turn that same proposal into an RFP and put it out to competitive bid, making a farce of all of the protective regulations. We are in effect giving the proposer's intellectual property to anyone who reads the *Commerce Business Daily*, or who gets a copy of the RFP."

"Hold on," the reader may say. "Are you and 'this fine man' opposed to competition in the selling of goods and services to the government? You seem to think the government should be able to buy research concepts and services on a sole-source basis. Does that mean you favor the inefficiency and corruption which the Competition in Contracting Act of 1984 was enacted to prevent?"

The answer to the two questions is a very sincere "no."

One can feel only revulsion at reading in the newspapers about executives of big corporate defense industries flying around the country in their private jets on personal business at the expense of the U.S. taxpayer. Equally reprehensible are practices of entertaining government officials and charging the costs to defense contracts, or buying earrings for admirals' wives and including this expense in falsified vouchers submitted to the government.

Hardly less serious are excessive profits reaped because inflated budgets did not have to stand up against free enterprise competition. In the same class are cost overruns due either to inefficiency or because a corporation "bought in" to a contract by deliberate underbidding, followed with a noncompetitive inflated budget for additional costs.

My visitor and I are both as outraged by such practices as is any other decent taxpaying citizen. But with the sole exception of the inflated noncompetitive bid, none of these has anything to do with CCA-84. These other things are criminal or otherwise illegal practices which are covered by other legislation.

My visitor and I also fully support the

Continued on Page 16

This Month's Cover



ROTC cadets race toward an objective during basic summer training at Ft. Knox, Ky. Some 4,800 cadets, 25 percent of them female, will have gone through the six-week course between mid-May and mid-August. The prize for those who successfully complete the grueling program and are deemed officer material is a two-year ROTC scholarship which pays for tuition, fees, books and supplies and provides $100 a month to the cadet during the school year. Bob Hubbert, a teacher at the Defense Information School, describes the training starting on Page 37. *(Photo by Ed Moreth)*

Health Care Studied

Civilian Review For Hospitals

The Department of Defense (DoD) has ordered an extensive, systematic review of all of its 168 military hospitals by civilian health care officials. Approximately ten million active-duty military personnel, dependents and retirees use DoD medical facilities.

The quality of the health care provided to U.S. military members, which has always been questioned in comparison to similar services provided in the civilian community, has undergone particularly sharp criticism during the past few years. Cases of purported malpractice by unlicensed physicians in which patients suffered serious permanent damage or death have kept concerns about the quality of military health care before the public. An internal audit of the system earlier this year reported defects in the record-keeping, training and review of military medical professionals.

The independent civilian review of patient care at all of DoD's hospitals was announced by the assistant secretary of defense for health affairs, Dr. William E. Mayer, at a meeting of the Defense Health Council last month. Members of the Defense Health Council include the surgeon general of each of the services, the U.S. surgeon general and the medical director of the Veterans Administration.

The review, to be conducted initially throughout calendar year 1986, is expected to measure the quality of the medical treatment. About 15 percent of all hospital admissions will be checked. Some 150,000 individual audits are to include records of all deaths of patients admitted

Continued on Page 17

SCIENCE/SCOPE

The U.S. Army's Bradley Fighting Vehicle System will pack more punch when equipped with the new TOW 2 antitank missile. The armored vehicle's TOW weapon subsystem design, which incorporates an integrated day/night sight unit, is being modified to fire the TOW 2. The missile features improved guidance and a more potent warhead designed to defeat advanced enemy armor. Design and tests of the TOW 2-compatible subsystem, including day and night firings against stationary and moving targets, have been completed. Hughes Aircraft Company is delivering TOW (Tube-launched, Optically tracked, Wire-guided) subsystems to FMC Corporation, the vehicle developer and system integrator. Deliveries of the TOW 2-compatible subsystems are scheduled to begin late this year.

A prototype Amraam missile passed within lethal distance of a target aircraft in the first guided launch of its full-scale development program. The unarmed weapon was launched from a U.S. Air Force F-16 flying at Mach 0.85 at an altitude of 21,000 feet. It was fired from behind a QF-100 drone flying at Mach 0.7 at 21,800 feet over White Sands Missile Range in New Mexico. Telemetry data indicate the 12-foot-long, 335-pound missile met all test objectives. The flight also verified Amraam's interface with the F-16's avionics system and the performance of its active radar guidance capabilities. Hughes is developing the AIM-120A advanced medium-range air-to-air missile and its companion rail launcher for the U.S. Air Force and Navy.

A new fire control system for Stinger missiles allows the shoulder-fired weapons to be launched against aircraft that are beyond normal visibility ranges. The system was developed by Hughes as part of an interim short-range air defense command and control network. It dramatically simplifies operation and aiming, reduces the possibility of human error, and increases overall accuracy. The system uses non-location data from the Hughes Position Location Reporting System and air target information from 2D or 3D sensors. The target to be engaged is selected on a small display and associated information is sent to the missile launcher. Red lights in the launcher's eyepiece tell the weapon operator where to aim the missile. When the enemy aircraft is in range, four green lights flash on. The missile will have been aimed accurately enough to acquire the target (day and night) and will be launched at a time that guarantees a hit.

A helicopter night vision system incorporates a sophisticated flight computer to aid in navigation and reduce pilot workload. The Hughes Night Vision System (HNVS) is a low-cost, forward-looking infrared (FLIR) system that provides excellent imagery and object detection in any visibility condition, day or night. The flight computer is highly accurate and easy to operate. It superimposes flight symbology and navigational data over the FLIR imagery to give the pilot a single display. All flight computer functions can be modified by software to meet different requirements.

A new technique may expand the use of lasers in commercial and military applications. The approach, called optical phase conjugation, is considered a major advance in optics because it offers a solution to distortion problems that have limited the use of lasers. When a laser beam passes through a turbulent atmosphere or a severely strained optical component, the beam is distorted and the information it carries is degraded. The Hughes technique, however, forces the laser to retrace its path through the distorting medium so the beam emerges free of distortion. The method eliminates the need for complex electro-optical and mechanical components to correct the distortions.

For more information write to: P.O. Box 45068, Dept. 73-2, Los Angeles, CA 90045-0068

HUGHES
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Continued from Page 14

objective of CCA-84—to prevent budget padding by requiring competition in the procurement of goods and services for the government. In fact, I favor CCA-84 in its entirety and only fervently wish it were being implemented by the executive branch in the spirit and manner apparently intended by Congress in its enactment.

Before explaining this apparent anomaly, let me point out that my recent visitor was only one of several officials in the GS-13 to GS-15 level of government service with whom I have discussed this problem. He was the third who quietly informed me of his intention to resign because of frustrations caused by regulations in implementing CCA-84.

"What really bugs me," one of these officials remarked, "is that the people behind this new approach must assume I'm corrupt. They must assume that I could have no other reason for giving a contract to a firm on a sole-source or unsolicited proposal basis except getting a bribe from them. My hard-gained knowledge of which firms have the capability and integrity to do a specific job well does not count for anything. The funny thing is that in all my years in government I've never been offered a bribe, and I've sure never asked for one. I don't know anybody who has. I know there are corrupt people out there, but why don't they nab them, instead of bringing the whole research program of the government to a halt?"

The government is about to lose the services of three—and God knows how many other—intelligent, dedicated and efficient officials because the new regulations implementing CCA-84 virtually ignore a key provision of the legislation.

The essence of CCA-84 is to be found in its opening section, section 303, as follows:

> Sec. 303. (a) (1) Except as provided in subsections (b), (c), and (g) and except in the case of procurement procedures otherwise expressly authorized by statute, an executive agency in conducting a procurement for property or services—
>
> (A) shall obtain full and open competition through the use of competitive procedures in accordance with the requirements of this title. . . .

One of the exceptions, subsection (c), reads in part as follows:

> (c) An executive agency may use procedures other than competitive procedures only when—
>
> (1) the property or services needed by the executive agency are available from only one responsible source and no other type of property or services will satisfy the needs of the executive agency. . . .

That subsection is amplified in subsection (d), as follows:

> (d) (1) For the purposes of applying subsection (c) (1)—
>
> (A) in the case of a contract for property or services to be awarded on the basis of acceptance of an unsolicited research proposal, the property or services shall be considered to be available from only one source if the source has submitted an unsolicited research proposal that demonstrates a unique and innovative concept the substance of which is not otherwise available to the United States and does not resemble the substance of a pending competitive procurement. . .

The attention of executive branch bureaucrats, however, has been focused on the many additional pages in CCA-84 which provide details on such things as "planning and solicitation requirements," "evaluation and award," "cost or pricing data," "contract requirements," "procurement procedures," "advocates for competition," "record requirements" and "annual report on competition." Those pages—probably rightly so—are intended to make clear to executive agencies that Congress really is serious about competition.

As a result, in drafting their regulations and guidance to administrators and contracting officers, the executive agencies are virtually ignoring the provisions of subsections (c)(1) and (d)(1)(A) of section 303, quoted above in their entirety.

In fact, there is at least one official executive agency interpretation of CCA-84 which makes no mention, either directly or by implication, of the exception to competition set forth in those subsections.

Thus, research procurement—so different from the procurement of hardware and most other kinds of services purchased by the government—is being subjected to constraints obviously unintended by CCA-84, and specifically precluded in the subsections quoted above. The result is that imagination and innovation, essential ingredients of the free enterprise system, are being strangled and stifled.

Those small businesses which in the past have been able to use unique, imaginative and innovative ideas to gain research support and contribute to the U.S. defense effort are rapidly losing their principal means of livelihood. We are, of course, turning to other fields of endeavor, and are also competing vigorously on the relatively unimaginative RFPs which emerge from the Pentagon bureaucracy. These efforts will undoubtedly enable some of us to survive.

But so long as the Competition in Contracting Act of 1984 continues to be implemented as it is now, the U.S. defense effort will continue to suffer irreparable damage as a result of the divorce of government research from the innovation and imagination that can come only from interaction with the civilian intellectual community. □

COL. T. N. DUPUY, U.S. Army, retired, is a writer on military subjects and the president of T. N. Dupuy Associates and executive director of its subsidiary, HERO (Historical Evaluation and Research Organization), located in Dunn Loring, Va.



"Hey, Sarge, we'll get you out as soon as we can restart the tank."

Continued from Page 14

rough the emergency room, surgical eaths, readmissions within seven days previous discharge and anesthesia-re- ted problems resulting in injury to the ervous system, including coma.

The review will be conducted by some) "peer review organizations," congres- onally mandated groups which have erformed similar reviews of the services rovided Medicare patients.

Instances of substandard or inappro- iate care identified during the review rocess are to be reported immediately the military hospital commander, the rvice surgeon general and Dr. Mayer's fice for corrective action. Monthly re- ew reports may identify issues requir- g systemwide correction.

Dr. Mayer emphasized, however, that e external review will supplement ex- nsive internal review procedures and form measures already under way. At e prompting of Secretary of Defense aspar W. Weinberger, Dr. Mayer's of- e has taken a number of steps to im- ove the current state of military medi- l care.

Among the reforms that have been rried out or are being guided through e system at present are:

- The requirement that all DoD phy- cians be properly licensed before being signed to a DoD hospital.
- The establishment of tighter con- ols over the storage of oxygen and oth- gases used in mixtures for anesthesia.
- Limiting the amount of off-duty work military doctor may perform and the stance he may travel to perform such ork.

n spite of the negative press the mili- tary medical community has been re- iving of late, DoD officials are gener- ly optimistic about the upcoming re- ew.

A spokesman at the Army Surgeon eneral's Office said the Army was look- g forward to the review and had in fact ked that it be conducted a month be- re Dr. Mayer's announcement. He said expected the review to show that DoD octors and medical facilities provide me excellent service, some about aver- e service, and some below-par service, st as one would expect to find in the vilian sector.

Periodically, military hospitals are re- ewed by the Joint Commission on Ac- editation of Hospitals (JCAH), just like vilian facilities. While all of the 168 oD hospitals are regularly accredited the JCAH, which examines hospital cility and record-keeping standards, ro percent of all hospitals in the civil- n sector did not receive accreditation ring the last reported review in 1983.

PJF□

Personality Profile Given

In Search of the Ideal Leader

By Maj. Michael L. McGee

What attributes does the AirLand Battle leader possess? Is there a specific temperament suited to leading soldiers to victory on the AirLand battlefield?

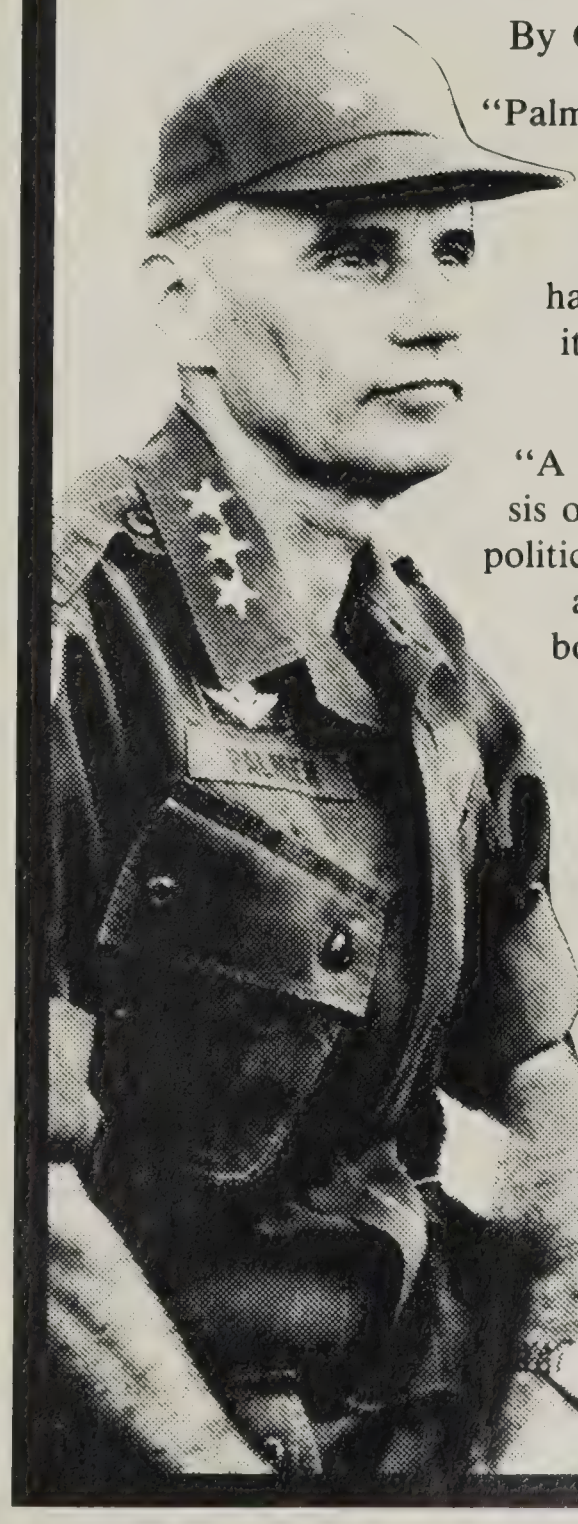
The Army's war-fighting doctrine states that there is such a leader. Innovation, creativity, stamina, professional values, soldierly qualities, perseverance, empathy and studiousness are some of his hallmarks. Especially noteworthy is the AirLand Battle leader's ability to lead soldiers, motivate people, create battlefield victories by personal presence and intervention and give context to content—because leadership is the crucial element of combat power.

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d out what sort of personality the Land Battle leader has.
ıccording to ExcelNet, the AirLand tle leader:
ı Is an extrovert who more easily re- s to people than to ideas.
ı Is intuitive and would rather look possibilities and relationships than -k with known facts.
ı Has feeling and bases judgments on sonal values rather than on impersonıalysis and logic.
ı Has a perceptive attitude and pre- flexibility and spontaneity over the ıned and orderly.
ı the jargon of personality and temıament assessments, the AirLand Batader, if he exists, is an ENFP (for *ex-*/ert, *intuitive*, *feeling*, *perceptive*), ıeone who is:

. . warmly enthusiastic, high-spirited, ıgenious, imaginative; able to do almost ıything that interests him; quick with a ɔlution for any difficulty and ready to elp anyone with a problem; often relies n his ability to improvise instead of prearing in advance; and can usually find ɔmpelling reasons for whatever he wants.

his personality or temperament prois based on the Meyers-Briggs Type cator (M-BTI). Of course, basing perality profiles on a single assessment hod may not be totally reliable. (There many personality attributes that are addressed by the M-BTI, such as rage, physical energy, relative intelli-ːe and mental tenacity.)
ı a sample of 144 new infantry sec- lieutenants, only 3.5 percent were Ps; that is, suitable AirLand Battle ers. In a recent Naval War College s, 3.4 percent were ENFPs; 44.8 per- of the class were opposite of the de-l profile. Controlling for extrover-/introversion resulted in 58.6 percent ıe class being totally opposite of the ɛcted AirLand Battle leader profile. hat is not surprising, because none of brigadier generals tested by the Cenfor Creative Leadership in Greensɔ, N.C., fit the expected AirLand Batleader profile, and only two percent into four "near-miss" temperaments. Fifty-one percent were exact opposites of the expected profile. The demonstrated path to success, assuming that being a general defines success, appears to be one of personality growth and development that is demonstrably different from what may be required for success on the AirLand battlefields of the future.

All this boils down to one thing—the Army is not selecting, training, educating, developing and promoting the type of leader its doctrine states is needed for the AirLand Battle. If ENFP is an accurate description of the AirLand Battle leader, then Army training and personnel management environments are out of synchrony with doctrine. If the desired Army leader profile is one that conflicts with the ENFP profile, then the Army's war-fighting doctrine is out of synchrony with the way leaders are trained.

Projected reality and doctrine do not match. At this rate, the AirLand Battle leader will not be found. Although this is not a truly scientific study, it does indicate that something is wrong. Is it Army doctrine? Is it the Army's leader selection and development process? Is it the personnel management system? Are the wrong people being promoted? Is the Army reinforcing the wrong behaviors? Is it chasing out young leaders with ENFP and near-miss profiles?

An Army of ENFPs is probably not necessary. A mixture may be the desirable organizational end state. Maybe the leaders should be ENFPs, and the surrounding support structure, the staff, could be made up of those who are more introverted, thoughtful or judgmental. Is this evidence that the Army needs a command track, a system that lets the best commanders command, instead of the best officers?

Perhaps there is hope in the adage, "Wars are not fought by the existing leadership . . . warriors will come to the forefront, bypassing the bureaucrats." □

MAJ. MICHAEL L. McGEE serves as chief of the leadership branch, Office of the Deputy Chief of Staff for Personnel at Headquarters, Forces Command.

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The Death of a Young Soldier: 'Nobody Really Cares, Do They?'

By Lt. Col. John S. McCord
U.S. Army, retired

Just back from Vietnam a few months, it fell to me to handle a "next-of-kin" notification. That is when it is necessary to put on your best uniform with all your medals and go tell a family that their next of kin has been killed in action. It is one of those assignments which gives sincere heartache to the messenger. The family is always devastated, and there is no way to soften news of such terrible, tragic finality.

When I arrived at the address on a lonesome country road in central Texas, nobody was home. The information on the papers which had been given to me indicated that the young man had been a 19-year-old Catholic.

I drove back to the nearest little town and asked at the feed store if there was a Catholic church nearby. The man I asked turned away from his work slowly, looked at me for a moment and then spat tobacco near my highly polished shoes.

"We got some of them papists around here. Nice enough folks, otherwise. They got a little place over yonder. That's where they gather up, come a Sunday." He pointed to a small white church across the highway.

The olive-drab Army sedan with its official markings was about as inconspicuous in that small town as a red fire truck. People all along the street were stopping and staring as I pulled into the small parking lot beside the building.

Looking for a priest, I was mildly ill at ease in the empty church, feeling a little like an intruder. As a non-Catholic, knowing nothing of their ritual, I nevertheless felt respect upon entering one of God's houses where people of a different belief come together. I knelt in the aisle and said quietly, "Heavenly Father, I'm in a place where others worship in a different way, I guess. I could use a little help with this mission I'm on today, and maybe my young soldier spoke to you from here."

At the moment I was rising and turning to leave, a door slammed open and a hearty voice boomed, "Help with what, captain?"

The priest was a chubby, balding little man. Not the type to shake hands, he just walked up and gave me a hug and a pat on the back. "C'mon back here to my cave and tell me about this help you need," he shouted with his Boston accent as if I were across a parade ground from him.

Physically shoved into a chair and handed a cup of genuinely disgusting coffee, I faced a suddenly quiet, serious little man. His booming voice was subdued.

"Son, I was an Army chaplain for 20 years, so I think I know why you are here. Who of my flock has fallen in battle?"

My prayer had been answered. This priest was no longer a stranger, a representative of a part of Christianity I only dimly understood. He was a friend; he was a veteran.



I told him the young soldier's name and all the information I had about his death. The priest's face was stiff and stoic. I asked if he knew the family, and he nodded. I also told him that I had been by, but nobody was home at the address I had. He said simply, "We'll go there together and wait 'till they come home."

During the drive, he spoke as if musing to himself. "There's more than the family to think about. There's the girl, too." Then, as if realizing that he had spoken aloud, he looked at me. "You don't concern yourself about that. I'll see to her. That's going to be as hard as telling the family. Those two young people had some wonderful plans. They started making plans in grade school."

They were not home when we arrived, so we were waiting in the Army sedan when they drove up. The father, the mother and two younger sisters—that was the family. The mother took one look at the priest and me and went on into the house, already crying, followed by the two girls. The father, before I could say anything, came up to me and asked in a trembling voice, "Did he do good? Did he die like a man?"

"Wherever he is today, sir, if heroe are there, they'll make him feel welcome.

"Can you tell me how it happened?

"Sir, your son was an artilleryman. H died in his gun position when the piec exploded. The whole crew was lost. I'r an infantry officer; the artillery fires thos guns to help protect men like me an those I lead. I don't understand the de tails of how a gun could explode lik that, but there are some things I do know I know those men fire as fast as they ca when people like me are in trouble an need help. Maybe they were trying to hard; maybe the gun got too hot. I don know, sir. It's one of those things we probably never know."

After he had heard all the known de tails of his son's death, we went into th house. I assured them that I was goin to be with them to help with all the que tions and decisions associated with th funeral and related matters. When th priest and I were leaving, the father cam with us to the car and asked, "Noboc really cares, do they?"

I stood there stiffly, trying to formu late an answer. It took me too long.

He said sadly, "I know. I read abo all these people marching in the stree and stuff. But you care, don't you, ar you didn't even know him?"

"Yes, sir."

Two days after the funeral I was wipi spit off my uniform again. It came me then that some protesters were cor pletely unlike the thoughtful and co cerned citizens I knew who were strong against our policy in Vietnam. Some we dangerous and unthinking, like a gu loud and uncaring at whom they we aimed. □

LT. COL. JOHN S. McCORD, reti from the Army in 1974 after 21 ye in the infantry, served in Vietnam 1962 and 1973. He has a master's gree and teaches economics at Ri land College in Dallas, Tex.

Corrections

In the August issue of ARMY, the count of the interview on the LHX w James R. Ambrose, under secretary of Army, incorrectly quoted Mr. Ambr on Page 48 as having said that "I is . . . not any longer a participant." statement should have read that "IBM . . . not an illogical participant."

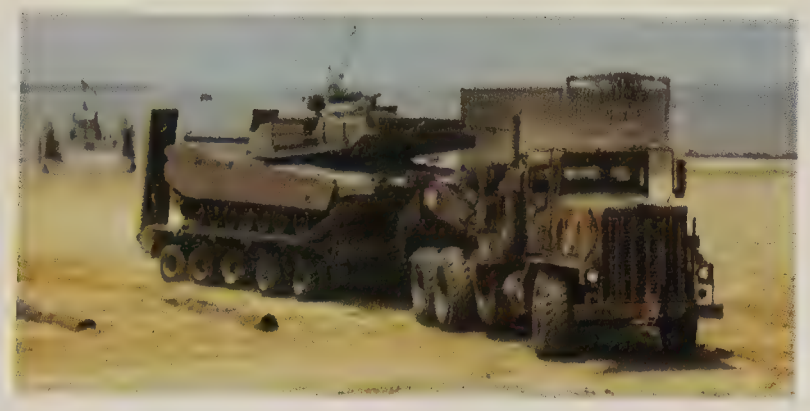
* * *

The soldier pictured in last month's sue of ARMY on Page 75 was incorre identified as SFC Gregory Taylor, sergeant, U.S. Military Support Eleme Grenada. The soldier is S.Sgt. Ronal Pritchard, also from that unit.



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By Col. William P. Boyd
U.S. Army, retired

When Integrity Goes, Careerism Often is Culprit

Men of Character

If the Army is truly dedicated to high ethics, there can be no compromise; and yet pursuit of this precious quality often bogs down when it stands in the way of ambition or expediency.

Scene one: the late 1950s. A motor pool before first light on a cool, clear fall morning. All of division artillery (DivArty) was preparing its weapons and vehicles to move a half mile down the street to the parade field for an aerial photograph to be taken at 1000 hours. The chief of staff of the Army had requested pictures of all major units in the division.

Preparation did not mean cleaning up the equipment—all vehicles and weapons were impeccably clean and freshly painted, as always. Preparation meant determining which vehicles in DivArty would make it under their own power and then deciding how we could best get the inoperative majority moved.

Our division had lots of paint, plenty of water and some of the nicest looking vehicles in the Army. Unfortunately, we had few spare parts and a considerable shortage of personnel. Yet the division was ballyhooed as being a front-line unit, ready to move out. We were, in fact, the Strategic Army Corps (the 1950s precursor of the Rapid Deployment Force). We were also incapable of fighting (or driving) our way out of the motor pool.

Five and one-half hours later, the equipment was lined up on the parade field. The tubes of the howitzers and rails of the rocket launchers were variously elevated so that each battery's weapons presented a fan. At 1000 hours the helicopter flew over and shot the pictures; the remainder of the day was devoted to returning the equipment to the motor pool and getting it on line. "On line" had profound meaning. It meant that all bumpers were aligned with an aiming circle. Our standards were high, and the photograph taken from the parade field proved it. The chief of staff liked the picture.

Scene two: same motor pool. A wrecke

ree-quarter-ton truck stood on line, with
e cab frame and windshield broken,
e canvas torn, the bumper, lights and
od in deplorable condition, one front
e blown and the rear axle snapped.
ne truck, smashed up by some soldiers
eeding through deep sandy tracks on
e range, was towed into the motor
ol and left on line awaiting a report of
rvey before going to ordnance.

The truck was spotted by the assistant
ivArty commander as he made a walk-
rough inspection at about 1730 hours
e day after the incident. When he en-
untered this wreck, among our proper-
aligned, spotless vehicles, he froze in
s tracks and convulsed.

"What's *that*?" he shouted.

"That's the truck that was wrecked out
the range," I replied.

"Get it washed!"

"Sir, we can't drive it to the wash rack."

"I don't care, tow it. But get it washed."

We obeyed.

What do washing this vehicle and the

the Army. I complied and reported that our readiness status was not good. The sergeant recommended some revisions. He suggested our battery was more ready than the report indicated. I challenged his assessment, citing vehicles deadlined for parts, shortage of personnel, lack of training, and so forth.

I refused to change the report and he told me it could not be sent forward like that. I understand that the report was subsequently changed, as was common practice throughout the division.



Before we leave the Army of my youth, let us witness one other scene.

The DivArty commander called me to his office. He asked that I agree to make a deposition before my departure for permanent change of station. The deposition was to help set the record straight on a matter involving a deceptive and misleading statement which had been made by a brigadier general in another unit on post. It was something that I had first-hand knowledge of.

I was initially shocked when I learned of the general's statement, which had no foundation in fact, and there was every reason to believe he knew it. The statement was designed to make the general look good at the expense of someone else.

Being aware of a breach of integrity by a senior officer was very unsettling to me. As a lieutenant, I viewed generals as gods, colonels somewhat like archangels and even majors as something only slightly less than celestial.

The deposition was duly made, in ef-

Principles of Honor?

otograph have in common? The essence
the matter (in this case, readiness) was
t as important as the appearance. Af-
reflection, it seems appropriate that
e vehicle should have been washed, be-
use it represented the organization of
ich it was a part. It was a wreck, but
shone.

Unfortunately, the deceit surrounding
r lack of readiness ran deeper. Once I
s in charge of the battery during a pe-
d when the commander, a 20-year vet-
n of World War II enlisted vintage,
s on leave. This experienced politician
ew how to complete a readiness report
perly, which, as events would show,
lid not.

One morning the DivArty operations
geant requested a special readiness re-
rt for Headquarters, Department of

Our division was always being declared "ready." This was done in spite of the fact that when I arrived in my battery as a newly assigned lieutenant, we had 28 (of 100 authorized) people present for duty. In addition to assignment shortages, many of our troops were at Camp Perry, Ohio, supporting the National Rifle Matches. Others were on special duty at higher headquarters.

Meaningful training was out of the question. Yet no one, regardless of rank or position, stepped forward and said that we should stop the charade. Many individuals, including some generals and would-be generals, showed they had a skewed concept of ethical standards. (The DivArty S3 went on to make several stars—and became, in fact, a very fine general.)

fect, providing testimony against the general. I departed on change of station. The general in question made his second star.

In many ways, the Army is better today; however, I am bothered by many things I have witnessed in recent years. Was the Army that was cleaning itself up from World War II essentially any different in its ethical foundations from the Army we have now?

We hear a lot about ethics today. It is a part of the curriculum at the Army War College. It is addressed in *Field Manual 100-1*. In the pamphlet *Guideposts for a Proud and Ready Army*, recently published by Headquarters, Department of the Army, there is an article by Gen. John A. Wickham Jr., chief of staff, U.S. Army, entitled "The Ethical Foundations

It seems to me that the bottom line is integrity; that is, the avoidance of deception in dealing with ourselves, our fellow human beings and the institution of which we are a part.

of Military Leadership." In it he quotes President George Washington: "War must be carried on systematically and to do it you must have men of character activated by principles of honor."

President Washington was clearly an example of the desired type of man. Even the most searching biographers have not impugned his ethical standards. It may have been that very virtue that caused the right men to put their faith in him when the wrong men would have eliminated him from the national scene. It may have been that virtue that saved the nation.

It seems to me that the bottom line is integrity; that is, the avoidance of deception in dealing with ourselves, our fellow human beings and the institution of which we are a part.

This is recognized in the U.S. Military Academy cadet prayer: "Strengthen and increase our admiration for honest dealing and clean thinking and suffer not our hatred of hypocrisy and pretense ever to diminish."

Yet integrity was an attribute that was fundamentally lacking in that division artillery years ago. A wrecked vehicle that bears all the scars and bruises of its mishap, including its dirt, makes a more honest statement than one that has been washed. And it goes without saying that a "fixed" readiness report is deceitful.

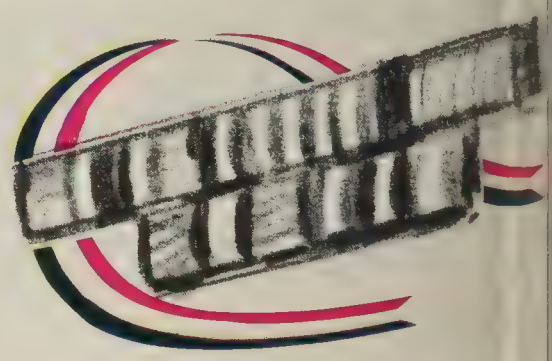
In his article, the chief of staff emphasizes loyalty to the institution and the unit, self-reliance and selfless service. He speaks of commitment, trustworthiness, honesty, truthfulness and candor. He is clearly talking about integrity. Although he does not say it, integrity should be the very cornerstone of the Army ethic.

This was not the case in that unit where I served as a lieutenant. The people in charge may have thought they were being loyal to both the institution (i.e., the Army) and the unit; however, if integrity had been the cornerstone of the Army's ethical code, they would have known that loyalty really meant having a ready unit and, if that was beyond their control, ensuring that no one was deceived into thinking otherwise.

I would like to make a disclaimer at this time, should I appear critical in the following discussion. The Army has been my life. It has rewarded me and has been rewarding. So what I say here is said with compassion and concern.

I believe that one of the greatest evils in the Army of my day has been rampant careerism. Unbridled ambition for promotion is just the opposite of selfless service and commitment, as the chief of staff defines those ideals in his article. Careerism has caused people to rationalize that what is good for them and their careers is good for the Army. One is reminded of the "Li'l Abner" comic strip character, Bull Moose, the corrupt senator millionaire. His motto was "what is good for Bull Moose is good for the U.S.A." The Dog Patchers kept reelecting him. Sadly, the Army also "elects" too many of that type.

My Army War College class was assembled in the lecture hall to hear a brigade commander tell us how to run a brigade. Feeling that we were the *crème de la crème*, and all being aspiring colonel-level commanders, we were eager to listen to what this brigade commander had to say. After hearing him talk for an hour and fielding questions for another 45 minutes, we commented over coffee that he had not told us how to be a brigade commander, but how to impress our bosses and get ahead. In fact, he had even been asked a question which in effect accused him of that.



That brigade commander made a sta in less than a year and subsequently mac another one.

Normal ambition is understandabl and any officer that does not want to g ahead is probably not worth his salt. B careerism is another matter. It might pla in the Hoffman Building (home of th Army's Military Personnel Center), b how well is it going to play on the battl field when the going gets tough? An A my that rewards careerism needs to tal a close look at itself.

Officers who get ahead in today's A my may be broadly defined as one three types:

■ The first type, is the all-busine rarely smiling martinet, who genera moves at a fast pace and with a glaze

---

COL. WILLIAM P. BOYD, U.S. Army, retired, completed 30 years of active military service in July of this year. His most recent assignment was as a strategic analyst at the Strategic Studies Institute, Army War College. He has commanded field artillery battalions in Vietnam and in the XVIII Airborne Corps at Ft. Bragg, N.C., as well as serving as the chief of manpower, Headquarters, U.S. Army, Europe. He graduated from the U.S. Military Academy and has a master's degree in nuclear physics from Tulane University. He is also a graduate of the Army War College.

eyes. The glaze is caused by a men-
ity that precludes focusing on anyone
ıer than those wearing stars or peers
ıo might have a chance of wearing
rs.

At social functions, these officers usu-
y stay in a corner with a general offi-
, if one is present (if not, they have
›bably declined the invitation). They
l be talking shop unless the general
›oses otherwise.

Some officers of this type choose the
e model of the gutsy leader (the John
ıynes). They probably work 14 hours
lay and would rather fire subordinates
:n train them and help them along.
hough always careful to cover their
cks, they may move with considerable
ıfidence (at least, they manage to ap-
ır to do so) and normally can handle
ses fairly well. Appearances are every-
ng to them. They appear as models of
e leaders and competent managers to
ir superiors, but may be vicious, de-
aning and bullying to subordinates.

■ Next are the "nervous in the ser-
e" types. They are overly cautious and
doubly hard to make sure they have
ays covered their tracks well. They are
ıcerned that their subordinates might
credit for something in the eyes of
ir superiors which would somehow
ıinish their own standing.

While they may be basically nice peo-
, they are really Lilliputians, always
ging their subordinates about so many
ty things that they frequently incur ire
l disdain. They work so desperately
d to do a good job that they usually
›ear to have accomplished it. But the
ans to the end are often an exercise in
iousness.

What one sees in these officers' eyes is
quently fear—fear of not looking good,
getting ahead. They are rarely ever
n.

Like the martinets, this type also likes to be seen with generals at cocktail parties. In fact, both continuously program their appearances to be in the presence of general officers, so when their file comes before a board there might be a general on it who will remember them.

■ Then there is the third type. These officers are generally calm, cool and thoughtful. Confident and competent, they move at whatever pace the occasion demands. They can take a bunch of misfits and mold them into an effective fighting team. Although ambitious, they are willing to balance that with consideration for their subordinates and the way their mission is accomplished, as opposed to being concerned about results only. The means to the end are important to them.

All of these types will probably survive in peacetime; however, I would bet my money on the third type in battle.

Too many of the first two types and too few of the last type are rewarded with commands and promotions. This means, of course, that the Army rewards careerism. While the chief of staff describes loyalty as a two-way obligation, the first two types see the obligation as primarily one way—in their direction. They clearly are not the fit mentors for younger, more-junior officers that the recent study on officer development headed by Lt. Gen. Charles W. Bagnal has indicated the Army needs.

The chief of staff in his discussion of ethics lists selfless service as a fundamental and enduring value. He says that selfless service "requires each of us to submerge emotions of self-gain in favor of the larger goals of mission accomplishment and welfare of the unit."

Yet the system over which he presides rewards far too many of those that put little stock in this idea. The position and status of the good officers chosen are demeaned by the selection of those who should not have been so honored.

Consider the following examples:

The time was the late 1960s. The corps artillery commander called a commander-staff meeting every Friday afternoon. The meeting began when the commander, a colonel (promotable), walked in, looked at Max (name changed) and said, "How many days?"

Max, a bombastic type, extracted his cigar long enough to answer, "48, sir."

The other three of us battalion commanders stood in silence with our eyes dropped, deep in our own thoughts about the farce that was being played out. The days being asked about were those without reported AWOLs in Max's battalion. They went up by seven each week, reflecting an absolutely phenomenal trait of leadership, considering that all the other battalions had varying AWOL numbers.

My personnel warrant officer, who was a friend of the personnel warrant officer in Max's battalion, kept me abreast of Max's AWOLs, which were, in fact, about average for the corps artillery battalions. He also related to me such tales as the one about the sergeant that Max sent to a city some 500 miles away to find and bring back an AWOL that, like the others, was never reported.

Max's battalion looked sharp, and his statistics were beautiful.

The corps artillery commander was apparently impressed. He was either naive enough to believe that all that glitters is, in fact, gold, or he was willing to go along with the charade because it also made him look good.

Max left his battalion about six months before my departure. The new battalion commander with whom I overlapped told me about two months into his assign-



hile truthfulness and honesty are something we should expect at every level, to find a total disregard for it at such high levels is almost frightening when one considers the potential for harm.

ment that the general corruption and deep-seated personnel problems he encountered in his battalion were astounding. Needless to say, as soon as he took over, the battalion started having AWOLs.

Some ten years later, in 1979, I briefly ran across Max on another continent to learn that he had been promoted and was at that time about ready to complete a colonel-level command.

I wondered, how can it be? Until then, I had faith that, given time, the system would cleanse itself. It had not.

The second example is from the early 1980s. An Army general, who was soon to be rewarded with another star, telephoned a four-star-ranking official on a very high-level staff to discuss an Army colonel who was a candidate for joining that staff. The colonel had been in a high-visibility joint assignment abroad.

The general told the official that the colonel had never been to a war college, that the Army tried to get him to attend the Army War College and he was totally obnoxious about it, that no one wanted him, that he had a bad interview with an Air Force major general who said under no circumstances would he (the Air Force general) hire him, and that the colonel was not the type of person the Army wanted on this staff.

The Army general was known to want only his protégés in such positions. Whatever his motives, however, they clearly have to be questioned when one considers the following. The colonel in question was selected for colonel from below the zone. He was selected for attendance to the Senior Service College resident course ahead of the majority of his contemporaries, and before this incident he graduated from a foreign national war college.

After the colonel learned of the telephone call, he questioned the Air Force general, a long-time acquaintance with whom he had always had a very good rapport. The Air Force general responded that he never talked with the Army general on the matter. In fact, he was queried by the Officers' Assignment Division of the Army Military Personnel Center (MILPERCEN) and gave a strong, positive endorsement. He then suggested that the colonel take the matter to the Army inspector general.

Either the Army general played very loose with facts, for which one must question his judgment, or there was a serious breach of integrity. What was stated was false, and there was every reason to believe the general knew it. It apparently accomplished what was intended, however, since the official did not accept the colonel onto his staff.

While truthfulness and honesty are something we should expect at every level, to find a total disregard for it at such high levels is almost frightening when one considers the potential for harm. What is worse, the system does not seem to be capable of checkmating these people. We keep right on promoting so many of them.

How much were the responses of these individuals in consonance with the system of which they are a part? What are the ethical standards of the Army as an institution?

"An officer's word is his bond" is not a slogan we see on posters plastered on walls. Yet recruiting films for West Point make an issue of a cadet's word being his bond. Can it be so for a cadet and not for an officer?

A colonel, for instance, is entrusted with the lives and equipment of a brigade and the decisions for fighting in combat, or the management of $100 million worth of aid to a Third World country. But the supreme irony is that he is not trusted to vouch for his ten-year-old daughter wh needs medical care but has forgotten he ID card (the card must be subsequentl produced or the officer is billed $33, eve though he is properly identified), to vouc that his 21-year-old daughter is, in fac in college without having a letter fro the college attesting to that fact befo her ID card can be renewed, or to re ister his wife in the defense enrollme eligibility reporting system without pr ducing a marriage license.

These are not actions imposed by so overzealous local bureaucrat. These a procedures spelled out in Army regul tions signed by the adjutant general. The belie the slogan, "Put the personal in t personnel."

Slogans can focus energies when back by programs and resources, if the Arm leadership is sincerely behind them. B they can also be a cover for not deali with our problems in a straightforwa manner. The Army is beset by a consta parade of slogans which quickly becor hardly more than clichés. It is almost if there is a belief that the slogans themselves will solve our problems.

See how "the Army takes care of own." Read the article entitled "W Pays Most When Military Orders The to Move?" in the "Commentary" secti of the 19 November, 1984, *Army Tim* In it, Maj. Peter G. Paulson compares t cost of a move from Washington, D.C to San Jose, Calif., for a major anc GS-13 where there is no military housi available for the major and the medi care, PX and commissary are too dist for convenient use. Without going i detail, the GS-13 is adequately reimburs whereas the major is substantially in de The difference may be enough to se one or two kids to college.

I challenge the Army, which designa 1984 as "the year of the Army famil

address some of the gut issues discussed Maj. Paulson. I challenge the Army do what it says: to take care of its vn.

What does this have to do with ethics d integrity? Simply this: if we mean iat we say, we will do it. We will be iat we appear, and we will not pretend be something we are not. We will be ndid about what our problems are and iat we intend to do about them.

This integrity also applies to the Ar-'s management of careers, where there little real management and where hid-n agendas dominate what management ere is.

While assigned to the Pentagon, I was charge of a large meeting of Army ee- and four-star-level officials, college ofessors and industry executive officer-el personnel at a division post. My od right arm at the installation was a ung captain who was everywhere at ce, knew everything and kept the whole air superbly organized and running oothly.

Near the end of the meeting, the cap-n confided his concern about being minated from the Army as a result of major review of junior officers' files out to be conducted. He feared that ne of his early reports might hurt him d asked that I check his records when k in Washington and talk with his ca-r managers to see what I could deter-ne.

A review of his files showed that some his early reports were not too good, t still revealed a very capable individ-, one who was getting his feet on the und, searching and challenging the tem, but who was getting ready to take . His later reports depicted a young icer who had, in fact, taken off and s flying well. He was no Milquetoast o had treaded so lightly that he had



walked on water all the way, but a fine young officer who had great potential.

My feelings were seconded by the major in the captain's career branch with whom I talked. The major admitted that it would be a travesty of justice if this captain were to be eliminated (which, in fact, he was). His numbers simply did not add up high enough.

In the chief of staff's article on ethics, he commented that "we must be willing to admit errors and to tolerate honest mistakes in the training environment." But the system that kicked this young man out was not willing to do that. Furthermore, the chief of staff wrote:

> Above all, we must never forget, in the rush of day-to-day activities, that our profession deals with the most profound moral issues, and that the *strength of character* [my italics], in our personal and professional lives, which we and the country seek in time of war must be fostered in times of peace.

That young captain had the intestinal fortitude and strength of character needed in time of war. I saw it, and I could see it in his files. The major agreed. But the system did not foster the development of it in times of peace. That was in 1972. I have seen nothing in the system since then to indicate that anything has changed.

Can a system that has institutionalized unethical practices expect its people, who have to work in such a system, not to conduct themselves accordingly in their dealings with the Army as an institution and with their fellow humans? Institutional practices which promote ethical abuses are well known. Some result from pressures to achieve, some from the apparent premise that the end justifies the means, some from the pursuit of parochial interests and so on.

Consider recruiting duty in light of what the chief of staff wrote: "We must eliminate the mind-set that produces such directives as 'I don't care how you do it, just do it.' "

What could fly more in the face of the chief of staff's stated goal than the actions forced upon our recruiters in meeting their quotas? These practices are well known and have been recently publicized. They have produced scandals, and recruiters have been relieved. Yet the unremitting pressure is still on. If a recruiter does not meet his quota, no matter how good he is, it means a black mark on his record and probably a ruined chance at promotion.

Does the pressure start with the recruiter's company commander, or even the brigade commander? Of course not—they are having pressures put on them. Their careers are at stake. So what is the gene-

Can a system that has institutionalized unethical practices expect its people, who have to work in such a system, not to conduct themselves accordingly in their dealings with the Army as an institution . . . ?

sis of the "mind-set" the chief of staff is talking about? It all begins at the top; that is, we are talking about institutional ethics.

I have already given a blatant example of cheating on a readiness report. But the fallaciousness of our readiness reporting system is far more subtle than that. The system does not address the second- and third-echelon personnel and logistical systems required to keep a unit fighting beyond perhaps the first week. What does the readiness of our units overseas really mean without sufficient lift to reinforce them?

In defense of the system, one could say it is not designed to address that. But what does that really tell us? Assumptions are being made about the real readiness of our forces that may not be correct. This does not represent honesty and candor. Without qualification, it is deceptive.

The program-budget process is a big deception that no one even makes any pretenses about. Our actions are reflected in the old adage, "The grasp should always be farther than the reach." We overstate our case to get what we think we need.

I lived intimately with that process for five years. The sham was so much a part of what we did that I think no one thought anything about it. Only now that I look back and reflect can I appreciate the extent to which it was an ingrained institutional ethical abuse. The entire process simply lacks candor, even if Congress does drive us to it.

And what about the pet projects of general officers in the Pentagon trying to make a name for themselves? They manage to push through their programs and initiate multiyear funding, perhaps at the expense of some ongoing programs. After a couple of years, they move on and are replaced by other generals who do the same thing.

It is a problem of institutional ethics in that the higher the rank, the more an individual represents the institution. Also, the institution tolerates this sort of thing. These general officers convince themselves and the powers that be that what they are doing is good for the Army.



It is sad that the Army rewards careerism, that too many of the best are not selected and too many of the second-best are, that ends too many times seem to justify the means, that trust is degraded to "show me" or "prove it," that slogans are often fallacious and seem to be an end in themselves and that we have an inadequate system of recognizing and rewarding those in peacetime who have the character and moral courage to lead us in war. The Army says things it does not mean and promises things it cannot deliver.

But I believe there is hope. The key to correcting the situation is a system for advancing our very best people to the top. If we had such a system, a lieutenant would not be asked to write a deposition on a general officer, a battalion commander would not cover for AWOLs and would not feel the pressure to do so, a division commander would have the moral courage to declare his unit *no ready*, commanders and division chief would be more interested in developin their subordinates than in making them selves look good and careerism would b recognized for the deception that it is.

How do we select our very best? W need to do some things that will be ver difficult, although probably not beyon our capability. In fact, if they are be yond our capability, my hope for the Ar my is ill founded, and we may well b on a sure road to disaster.

The first step is to develop a real off cer evaluation report (OER) system. A the system actually works today, the OE primarily serves as a motivational too and not as a tool for discriminating b tween capabilities and potentials of diffe ent officers. We seem to feel compelle always to give a report just a little bett than the officer deserves to encoura him to keep up the good work or do be ter. Hence, the system becomes inflate and raters must make a choice betwe being honest and being fair. As it is no if you are honest with the system, y are not fair to the officer being rated; turn, if you are fair to the officer, y are not honest with the system.

The first step to improving the syste is to make the OER confidential. Th simple change would probably do mo to make the system honest, i.e., redu inflation of the system, than anythi else. Most people do not like to tell person he has fouled up. Also, most our officers are good. When one is tryi to compare good to good, it becom even more painful to say anything th might not help an officer along.

I realize that there are problems w this recommendation. An officer m need to see his OERs to improve his p formance. To get around this, counsel should be enforced, and some system

roviding OERs to an officer after he as left his unit could undoubtedly be evised. The point is that until we can be andid on OERs, we cannot be candid n anything else. The OER must be con-dered a tool for the Army, not a ticket or the individual.

The next step in improving the system ıay have already been taken by devel-ping a rating index for the senior rater. hat practice should probably be extend-d to the other raters. There should also e some sort of peer rating. A smart offi-er with a little luck can program himself o shine for his superiors, whereas his eers will more frequently see him for xactly what he is. The chief of staff uses eer rating now in selecting general offi-ers, providing a precedent.

We should, likewise, consider some ort of input from subordinates. I know ıe arguments against that. I know it is eminiscent of the troops electing their fficers, with the attendant corruption of ıat system; however, no one can appre-ate the ethical standards of officers quite ke subordinates.

Selection for command should be based n some combination of board recom-endation and selection at the local lev-. Where the board may fail to recog-ze careerism, at least until the OER stem is changed, the local commander ıs a better chance of recognizing the fference between an officer who im-esses his superiors by doing a good job ıd one who does a good job to impress s superiors.

If we return to a branch system of man-gement, then officers would be better ıown within their branches and could e more closely monitored. Under those rcumstances, the branch should have a y in command selection. The board commendation, however, should be a re-uirement to make the system fair across the Army. Without it, the branch or local commander could not place an officer in command.

I do not presume that my proposals are a complete solution; however, I believe that they will help. The key is to select men and women who are professionally competent, motivated by loyalty to something greater than themselves (i.e., the nation) and have ethical beliefs founded in integrity.

The soldier of good character is the subject of William Wordsworth's poem "Character of the Happy Warrior." It makes a fitting conclusion.

Who is the happy warrior, who is he
That every man in arms should wish to be?
—It is the generous spirit, who, when brought
Among the tasks of real life, hath wrought
Upon the plan that pleased his boyish thought:
Whose high endeavors are an inward light
That makes the path before him always bright:
. . . . . .
[He] abides by his resolve, and stops not there,
But makes his moral being his prime care;
. . . . . .
Who comprehends his trust, and to the same
Keeps faithful with a singleness of aim;
And therefore does not stop nor lie in wait
For wealth, or honors, or for worldly state;
. . . . . .
This is the happy warrior, this is He
That every Man in arms should wish to be.

Have a Nice Day

We were told that all units of the 116th Infantry Regiment would go on maneuvers for three days crossing the English moors. The object was to test our ability to chase the enemy at night over unfamiliar terrain.

It was a cold, rainy winter's night when we set forth across the moors. The mist and rain seemed to be blowing into our faces no matter which way we turned. The infantrymen tied white handkerchiefs to their packs to make it easier to follow the man in front. We were continually waiting, not knowing what was going on ahead of us.

The first night was uneventful except for the crossing of a stream. We could have waded across, but the officers insisted we use stepping stones in the pitch-black night. There were two officers standing in the stream attempting to help us across. One, with a flashlight that was largely ineffective in the pouring rain, turned out to be our chaplain.

We found out who he was when we heard someone say, "Get that goddamned light out of my eyes, you stupid bastard!" Almost immediately we heard the same voice apologizing, "Oh, forgive me, Father, I didn't know it was you. I didn't mean to swear at you sir, I, I, I—!"

When it came my turn to cross, I slipped off a stepping stone and fell to my knees in the stream, almost taking the chaplain with me. I laughed and managed to say, "It just isn't my day, Father."

"Nor mine, son!" he replied.

RUDY ALBAIR

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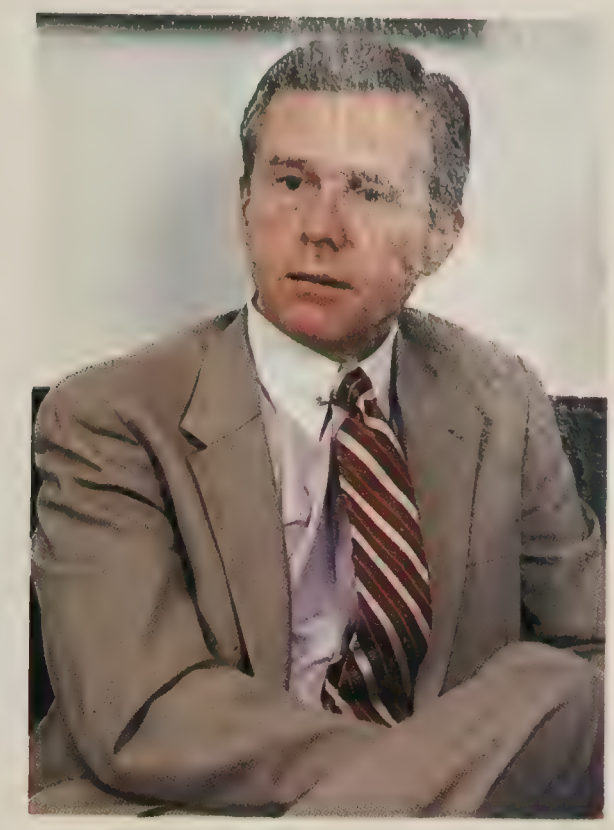
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Military People Issues

Senator Wilson: 'No Choice But To Get Involved'



Pete Wilson

This is another in an occasional series of interviews with key U.S. senators and representatives whose varying views are instrumental in shaping national defense policies.

By L. James Binder
Editor in Chief

This California lawmaker believes that, if the country is to maintain a first-rate fighting force, Congress has to become deeply concerned about providing adequate housing, pay and retirement and survivor benefits. He also has strong ideas about chemical warfare and the light division.

There was a time when there was a special kinship between Congress and members of the armed forces. Whatever the period—war or peace, boom or recession—those in uniform could pretty generally depend on the nation's legislators to look after them. Pay and benefits were never lavish, but, by and large, they were fair according to the standards of the day. Modest though its financial situation might be, a military family rarely had to worry about losing benefits and privileges already attained.

Then, sometime after the Vietnam war, something happened to this relationship. There was talk of cutting back on such integral "perks" as commissaries and family medical care and reducing retirement pay and benefits. Then, alarmed by declining enlistment levels, lawmakers sharply increased active-duty pay and, in a Catch-22 aftermath, pointed to the new levels to justify arguments for fringe benefit cutbacks. To many military people, past and present, what was once a compassionate and dependable friend has become a suspicious and unpredictable overseer.

This is a role that does not sit well with some lawmakers, who see the trend toward reducing the government's obligation to its service members as cynical and self-defeating in an era of intense competition to attract and retain high-quality personnel. Among these is Sen. Pete Wilson, a first-term Republican from California, who sits on the Senate Armed Services Committee (SASC).

"If we are seriously concerned about the quality and capability of the armed forces," he explained in an interview, "we have no choice but to become deeply concerned and involved in the policies that affect the morale and well-being of those we are calling upon to defend the nation's security interests."

Sen. Wilson's views in this area have more significance than a senator just speaking his mind, for he is the chairman of the SASC's subcommittee on manpower and personnel, through which much of the legislation dealing with "morale and well-being" must pass before it reaches the full committee and, if it passes muster, the Senate floor.

The California senator served in the Marine Corps from 1955 to 1958, an association he feels has given him an empathy not completely shared by legislators who never had military service (25 of the Senate's 100 members and over half, 220, of the House's 435 members are in this category):

"Having been a rifle company officer and having become involved in the problems of my troopers gave me an understanding that you might not have otherwise had; that is, if you had not had that experience. I think I know what it is to be 18 or 19 years old and worried about things that are going on at home, worried about bills, worried about credit jewelers. I have a pretty good idea of what it is like to be 18 or 19 and to go off on liberty in circumstances that don't allow your limited budget to stretch very far, or to be confronted with very limited choices."

He points out that there is an "increasingly obvious need" for Congress to become involved in personnel matters:

"For one thing, the character [of military service] has changed greatly since I served. It is far more common for your enlisted men to be family men. More than half the Army are married by the end of their first enlistment. It is not quite as high in the Marine Corps, but it is increasingly a family situation that we



Photos by David Hathcox

are responding to when we work to provide adequate compensation, benefits, recreation and morale.

"The morale of the young soldier who is concerned about his wife's or children's well-being is obvious. If he's worried or if there is a nagging problem, he is not going to be as effective as he should be in the field or in garrison."

One of the chief problem areas, according to the senator, is family housing, both the high cost and availability. In his own state, there are less than 50,000 military housing units to serve a military population of over 240,000. Out of a series of hearings on the issue has come a Wilson-sponsored bill, recently adopted by the Senate, which would allow advance payments on housing allowances for service members changing stations within the United States. Personnel moving overseas already have such an allowance.

"The typical enlisted family crossing the country after assignment, say to Ft. Ord, finds that it is a costly move and they often arrive at their destination almost broke. Then they are faced with tremendous demands: from landlords for a first month's rent, a deposit, and so on."

In some high-rent areas, landlords require several months' rent in advance, often forcing military families to live in substandard housing or miles away from duty stations in violation of regulations. Sen. Wilson is seeking to alleviate shortages which lead to the high rents through hearings in such crowded population centers as Monterey, Calif., home of Ft. Ord, and San Diego.

Sen. Pete Wilson (R-Calif.) was elected to his first term in the Senate in 1982, defeating Democratic Gov. Edmund G. Brown Jr. by a margin of 52 to 45 percent. He served in the California Assembly from 1966 to 1971 and from 1971 to 1982 was the highly successful mayor of San Diego. California's 52-year-old junior senator served in the U.S. Marines from 1955 to 1958 and graduated from Yale University in 1955 and from the University of California (Berkeley) law school in 1962. He lives in San Diego and is a native of Lake Forest, Ill. The senator is a member of the Senate Armed Services Committee and is chairman of its subcommittee on manpower and personnel; a member of subcommittees on seapower and force projection, strategic and theater nuclear forces, and tactical warfare; and a member of the Joint Economic Committee and the Senate Special Committee on Aging and Agriculture, Nutrition and Forestry Committee.

Building more government housing is a solution but is not always feasible because many posts and bases are small or so built-up there is no room for expansion, Sen. Wilson said.

"They don't offer any potential for military housing even if funding were available. Others, like Ft. Ord, where I think they are doing a good job, have a base of some 28,000 acres, and they have correctly reckoned that some small portion of that could be made available to private-sector developers who can be interested in building for a market that clearly exists and which cannot be accommodated in conventional local housing. By exercising some imagination, the Army is in a good position to involve the local private sector in the solution to a critical problem."

It became clear during the hearings that "there is a need for some regulatory change within the military bureaucracy," the lawmaker said. One "shocking" indicator, he recalled, was the Navy's experience in the Long Beach area when it put out a "request for proposals" after noting considerable interest in undertaking building projects by area private developers. Although some 200 developers had shown at least some interest, there was virtually no response to the request for proposals.

"The reason is that Department of Defense density regulations are wholly unrealistic in many of the urban markets," Mr. Wilson asserted.

Indeed, DoD guidance on acceptable density was much lower than that in a number of the better areas in the city of Long Beach.

"In other words, the request for proposals prescribed a density that simply did not allow a developer to make a profit. What is more, it prescribed a density that was not required to avoid what is obviously a problem you have when there is an overconcentration of low-income families—young families."

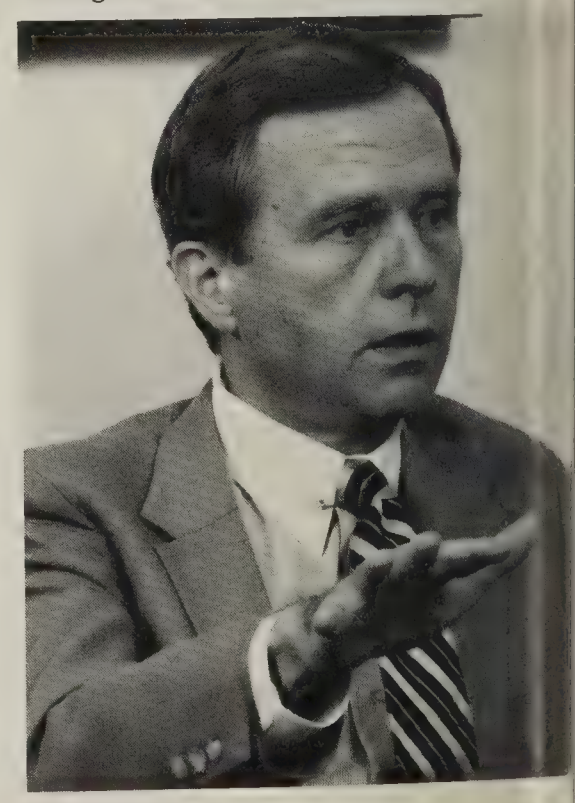
Can the military establishment correct this situation without having to go through Congress?

"Sure they can and we are more than just encouraging them to do so."

As manpower and personnel subcommittee chairman, California's junior senator has also had a leadership role in shaping legislation on retired pay.

Noting that "there has been a demand manifested in both houses of Congress that there be retirement reform," Sen. Wilson advocated a reduction of $1.8 billion, the figure the Senate used when it and the House sought to resolve their differences on retirement and other budget issues in a joint conference committee. The House wanted a $4 billion cutback; the result was agreement on a $2.9 billion decrease with the cut expected to come from structural changes and the cost-of-living allowance (COLA).

Specific proposals for meeting the reduction were to be worked out by the Department of Defense. The $302.5 billion Defense Authorization Bill, which contains the retirement proposals and advance payments on housing allowance during domestic moves, has been passed



y the Senate and was to be voted upon y the House when Congress returns this nonth from its August recess.

The authorization bill also contains hanges in the Survivor Benefit Plan (SBP), thorny issue on which an aide describes en. Wilson as "one of the two or three ıost knowledgeable members of the Sen- ;e." As head of the subcommittee charged ;ith overseeing SBP benefits, the senator onducted hearings which were instru- ıental in proposing changes that would hield benefits from reductions based on ɔcial security income while setting bene- ts at 55 percent of retirement income to ge 62, and at 35 percent at 62 and af- ;r.

Mr. Wilson has been a steady advocate f the three percent military pay increase ɔntained in the authorization bill, initial- favoring its taking effect on 1 January, 986, but later becoming a strong sup- orter of what became the conference ɔmmittee's recommendation: 1 October, 985.

Why three percent?

"It's essentially a cost-of-living adjust- ıent which will follow the last pay in- ;ease by nine months. We were trying) do what we could. We are concerned ;ith compensation and with the quality f this all-volunteer force. We think it's ery high quality; I am told by command- ;s in every theater I have visited that hese are the best kids we've ever had— ıe best troops we've ever commanded.' "

"That's a very heartening thing and we ant to keep it that way, but it's an ex- ensive proposition."

Another provision in the conference :port of which the senator is proud is ıe authorizing a CHAMPUS dental care ;ogram:

"It will not be implemented until a ;ar from now when we have had the ɔportunity to hold hearings in the Sen- e, but what is projected is a program ıat would allow conventional dental ıre in addition to emergency dental care, ith the nonemergency care being fund- l about 60 percent by the government ıd 40 percent by the member.

"We are going to hold a series of hear- gs this fall on a number of CHAMPUS- lated items. Health care has become a ajor item, and not just for the member the services but for the family as well."

Sen. Wilson is a strong supporter of esident Reagan's defense policies, al- ough he laughingly concedes that con- ıued unanimous adherence could de- nd on what stance the President takes regard to the so-called "Midgetman"



mobile ICBM, a proposed piece of weaponry which the senator strongly opposes.

The senator was interviewed just as the House and Senate conference committee had completed its work on the Defense Authorization Bill.

"Sen. [Barry M.] Goldwater [Senate Armed Services Committee chairman] told me that the conference had resolved 1,300 separate issues. I think that, by and large, there is an adequate level of funding for most projects and programs, although not always at the level I would like to see."

He cited the Midgetman as one of the most notable instances of unwise development funding, charging that it contains "serious design flaws" and at 30,000 pounds is underweight for its mission. The senator feels that there are still a number of policy questions attendant to the basing of a small missile which should be resolved before funds are voted for development.

His opposition to the Midgetman has put him in conflict with Rep. Les Aspin (D-Wisc.), House Armed Services Committee chairman and one of the Midgetman's leading supporters.

The California legislator is much more enthusiastic about conference action in approving production of binary chemical weapons, a decision he hails as "the beginning of a response to a need that has been outlined to us by every field commander as one of the most urgent priorities."

"I don't think it's exaggerating to say that without this action the United States would have virtually no chemical warfare capability, really making us enormously vulnerable in conventional warfare to the use of these agents against our troops.

"Those that argue that a purely defense stance is an adequate response are wrong —they're just flat wrong. The only way to deter chemical attack is much as we did in World War II. There was almost no instance of the use of chemical weapons there because both sides knew that the other side had the capacity to retaliate. If one has that capability and the other does not, it's an invitation to use them."

The fate of the chemical weapons measure depends on the vote in the House. It has been accepted in the Senate and Sen. Wilson is confident that the other chamber will do likewise, partly because he feels that there will be considerable ef-



Sen. Wilson (left) *outlines his views on the light division concept to* ARMY *Editor in Chief L. James Binder. He is a strong supporter of light forces.*

forts made by House conferees to secure its passage.

Noting that Sen. Carl Levin (D-Mich.), for example, has been among Senate Armed Services Committee members who call for more emphasis on conventional capabilities, Sen. Wilson was asked if he agreed:

"I would say that the chief difference between the Republican and Democratic sides in the committee has been that Republicans favor the modernization and strengthening of both our strategic and conventional capabilities.

"Our criticism of our friends on the other side has been that they have talked a good game and in some cases voted to strengthen conventional capabilities, often at the expense of the strategic. I think that's unwise; you have to recognize that the need exists for both.

"To an increasing degree, there is a great deal of thinking that we must be prepared to fight conventional wars along somewhat different lines than we have, that there is less likelihood to be in a kind of major land war on the scale we knew in World Wars I and II. There is likely to be the need for more 'discreet' kinds of conventional warfare and, coupled with that, a requirement that we maintain at least a certain ability to prevent any adventurism on the part of the Soviet Union with respect to strategic strikes.

"They have to be assured that they cannot profit from a first strike and, to the extent that we can guarantee that they will suffer retaliation, I think we can enjoy some assurance that they will be deterred from engaging in it.

"You cannot, therefore, afford to ignore the strategic in favor of the conventional. Nor can you afford to ignore the conventional."

The California senator is a strong supporter of the Army's new light divisions, the first of which—the 7th Infantry Division—is garrisoned at Ft. Ord.

"I think there is and will be an increasing emphasis placed upon the capabilities of the light divisions, Special Forces, the Marines and airborne troops," he said. "There is more and more concern that we improve our capability to rapidly deploy forces . . . and I think that the political circumstances of our shrinking world dictate that we do so.

"We are required to maintain large heavy-division capabilities in two areas of the world—Europe and the Far East. But since we cannot do this everywhere, we also have the need to maintain the capability to move quickly and with sufficient force so that we are clearly capable of projecting force into virtually any area of the world. Certain areas that obviously come to mind as examples are the Middle East and Central America."



To a question of how staunch is Senate support of the light-division concept, the senator responded that "there may be criticism of whether or not the light division adequately responds to the need, but I don't think there is any argument, really, about the need."

June's hostage crisis reportedly triggered an increase in congressional resolve to beef up our defense forces, but the senator from California is not convinced that there has been any significant or lasting trend in this regard:

"The problem is that you get lip service, probably from every quarter, that America must have a strong defense capability. The difficulty comes when you measure that objectively by people's votes on adequate levels of funding."

He declared later in the interview:

"The single, overriding concern we have had in this long, long session has been that there are a great many members of Congress who, I think quite irresponsibly, have sought to slash defense spending in an unwise way. We are all under pressure, and should be, to cut spending and reduce the deficit.

"If we don't reduce the deficit, we're going to have a serious economic calamity. We are going to have a declining economy, rising unemployment, further declining exports. That's not acceptable.

"We *do* have to cut spending, but it can't all come from defense. That's utterly irresponsible."

A Simple Solution

We were traveling on one of our city's beltways during the morning rush hour, trying desperately to keep pace with the traffic and watch for the exit sign we needed. As the sign first appeared, we got into the right-hand lane, only to discover it was an on-ramp; the exit was still a mile away. We accelerated and pulled back into the center lane. It was then that an unmarked police car pulled us over.

I was furious as the lieutenant approached our car. Since my driver was one of those who just accepts whatever a police officer does, I spoke up and tried to explain our situation—that we were not speeding, but keeping pace with traffic.

The lieutenant was brisk to the point of being obnoxious. He cited us for speeding at a cost of $45.

Immediately upon arrival home, I wrote a letter to the lieutenant's commanding officer. Surprisingly, I received a telephone call from a young captain of the state police who identified himself as the lieutenant's commanding officer.

"I have had so many complaints about that lieutenant and his attitude," the captain said. "I don't know what to do. He is such a good commander—his troops love him. But he just seems to rub the public the wrong way."

"So keep him off the streets," I quipped.

"WHAT DID YOU SAY?"

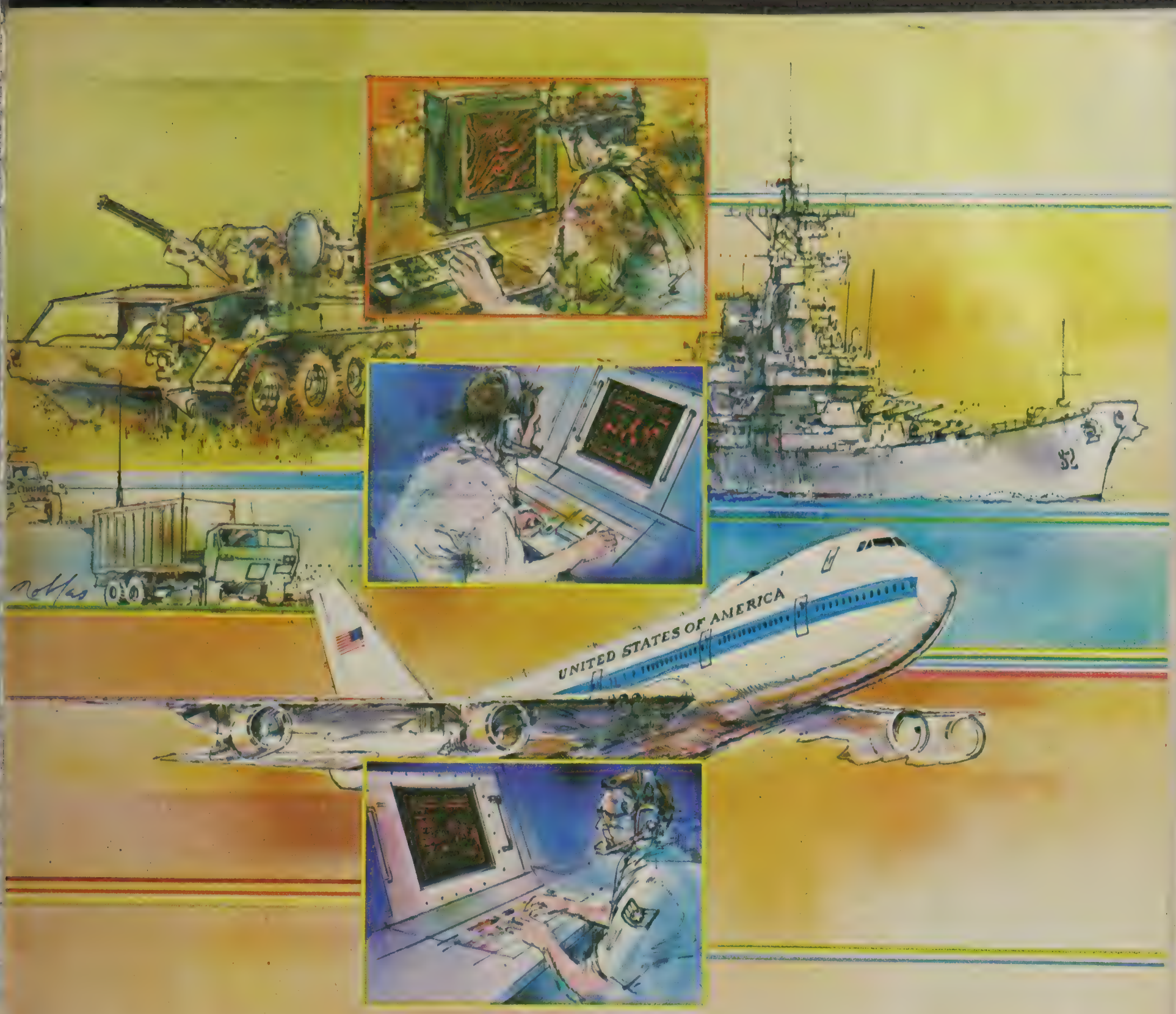
"If the man is a good commander, let him command, but keep him away from the public," I said slowly so that he could comprehend what I was saying.

There was a moment's total silence. When the captain finally spoke again, it was obvious that he was shocked by the simplicity of my analysis. "You know, I think you've given me the answer to my problem!"

He was still thanking me profusely when I said goodbye.

MARIAN R. NICELY

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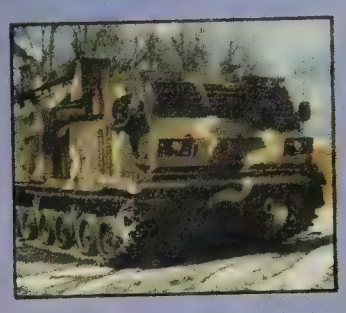
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FMC

Cadets Are Able, Tough, Motivated

The prospect of scholarship awards lies behind the spirited competition at ROTC basic camps, as the popularity of the campus officer training program reaches new highs.

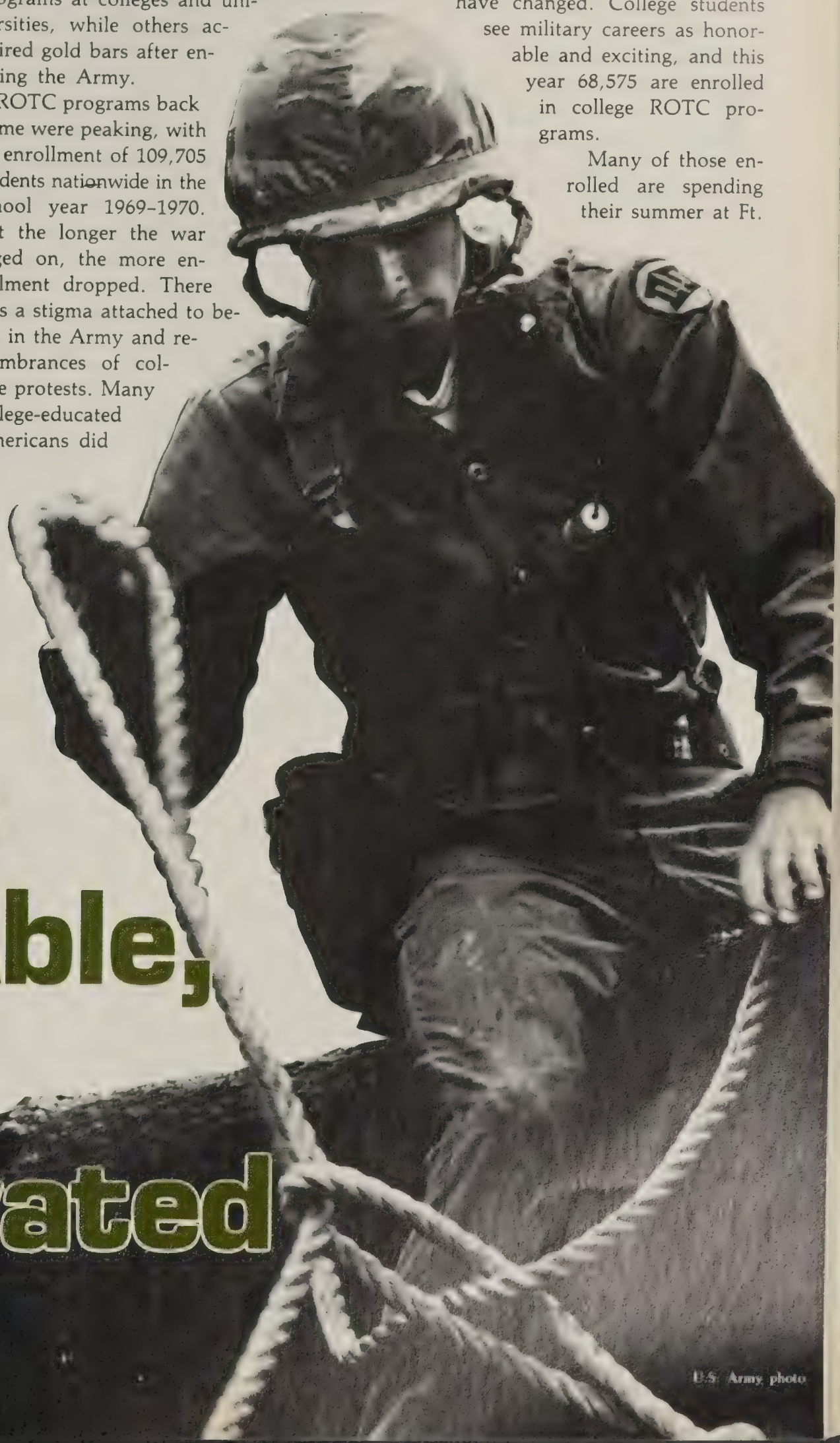
By Bob Hubbert

In 1968, North Vietnamese soldiers, supported by Vietcong soldiers and sympathizers, launched the Tet offensive in South Vietnam. Battles raged up and down the war-torn country, and American soldiers found themselves fighting for their lives. Many were newly commissioned Army second lieutenants. Some received commissions through the Reserve Officers' Training Corps programs at colleges and universities, while others acquired gold bars after entering the Army.

ROTC programs back home were peaking, with an enrollment of 109,705 students nationwide in the school year 1969–1970. But the longer the war raged on, the more enrollment dropped. There was a stigma attached to being in the Army and remembrances of college protests. Many college-educated Americans did not want to be part of any military organization—ever.

The Vietnam war ended with the evacuation of the U.S. embassy in Saigon in April 1975. ROTC enrollment was down to 39,346 that same month and year. Getting students to join ROTC was as easy as crossing the Atlantic Ocean on the *Titanic*; however, ten years later, something has happened, and attitudes have changed. College students see military careers as honorable and exciting, and this year 68,575 are enrolled in college ROTC programs.

Many of those enrolled are spending their summer at Ft.



U.S. Army photo

Knox, Ky., learning the basics of Army life. They are at basic camp, and they have come from 314 colleges and universities across America which host ROTC programs.

The students have given up summer jobs, privacy and youthful endeavors in pursuit of military careers.

They are competing for the chance to win two-year ROTC scholarships. The scholarships pay tuition, lab fees, books and supplies and $100 a month for ten months each year.

The students, both male and female, undergo demanding physical and mental training and testing six days a week for six consecutive weeks. They do not have to stay and can quit for any reason, any time they want. For those who stick it out and are deemed "officer material" by a blue-ribbon panel of Army officers and experts, scholarships are awarded.

For many students, called cadets, the scholarships mean a return to college without financial worry or part-time jobs. For most, it means the beginning of military careers.

Joe Bartley, public information officer for the camp, said that some cadets will decide the Army is better off without them.

"We'll train 4,800 cadets here between 13 May and 15 August. They're under no obligation to stay. If a cadet gets too sick to train, is homesick, has a family emergency or just simply doesn't like the Army, we put him on a bus or plane and send him home. The program isn't for everybody."

Mr. Bartley said that approximately 25 percent of the cadets are female, and that the women tend to perform better than many of the men. Male cadets feel pressure to excel.

"I think it has to do with the male ego," said Mr. Bartley. "If a woman can rappel from a tower, or cross a river on a rope, a man suddenly becomes less inhibited and more daring."

Drill sergeants, Army noncommissioned officers who train enlisted basic soldiers, help train cadets at summer camp. They, too, see women as more aggressive and with more to prove.

BOB HUBBERT teaches intermediate photojournalism at the Defense Information School, Ft. Benjamin Harrison, Ind. He is a civilian instructor who spent 12 years in the Army, serving in Vietnam, Europe, Panama and Korea.



Photos by PA1 Ed Moreth, U.S. Coast Guard

Cadet Todd Dixon of Western Carolina University sets up a board (above) *to cross a simulated minefield during basic camp training at Ft. Knox, Ky., then cautiously moves ahead* (right) *while his squad leader, David Ochs, steadies the board.*

"Women here are tough," said SFC Bennie Northern. "They get out here on leadership decision courses and never hesitate. They make the men move a little quicker."

For all college ROTC students, the key to successful careers begins with completion of the basic summer camp as sophomores and juniors and advanced camp as seniors. The basic camp is the entry point for students who did not take part in ROTC programs during the first two years of college. The advanced camp is for prior-trained juniors going into their senior year of college.

The basic camp is for many the tougher of the two tests. Basic camp is a rude awakening to Army life.

A cadet's day begins with a 5:00 A.M. wake up and ends with lights out at 10:00 P.M. Even eating becomes a race against time. Cadets are taught the value of minute, both on and off the battlefiel The old saying, "He who hesitates is lost takes on new meaning at camp.

"Cadet, you're dead. Move out of th way and wait for the platoon up by th clearing," shouts a drill sergeant to a c det on a flare-reaction course.

"Who can tell me, can anyone tell m the proper procedures and time for rea tion to a flare? C'mon, can anyone t



U.S. Army photo

me?" A hush falls over the platoon until finally one cadet stands and repeats lessons learned in class.

"No, no, no!" shouts the drill sergeant. "Let's get back on the road and try it again."

All cadets are being trained for leadership roles, and they alternate leadership positions during camp. Many make mistakes or are short tempered with other cadets, but all must share the success or failures of their platoons and companies.

The six-week camp culminates with a three-day field training exercise that tests each cadet's ability to lead, follow, work as a member of a team and perform basic military skills and functions. The cadets live, sleep and eat in the field and are tested individually at many stations during the exercise.

Toward the end of the camp, each cadet must take and pass the tough Army physical training test. Based on all scores and an evaluation by both military train-

Ft. Knox basic camp cadets learn the uses of the low crawl (left) *while negotiating an obstacle course under simulated enemy fire.* Below, *Cadet Paul Frazier of Delta State University, Cleveland, Miss., uses a rope to vault a fence assumed to be booby trapped.*





The latest technology roll

Marietta, Georgia—
July 12, 1985

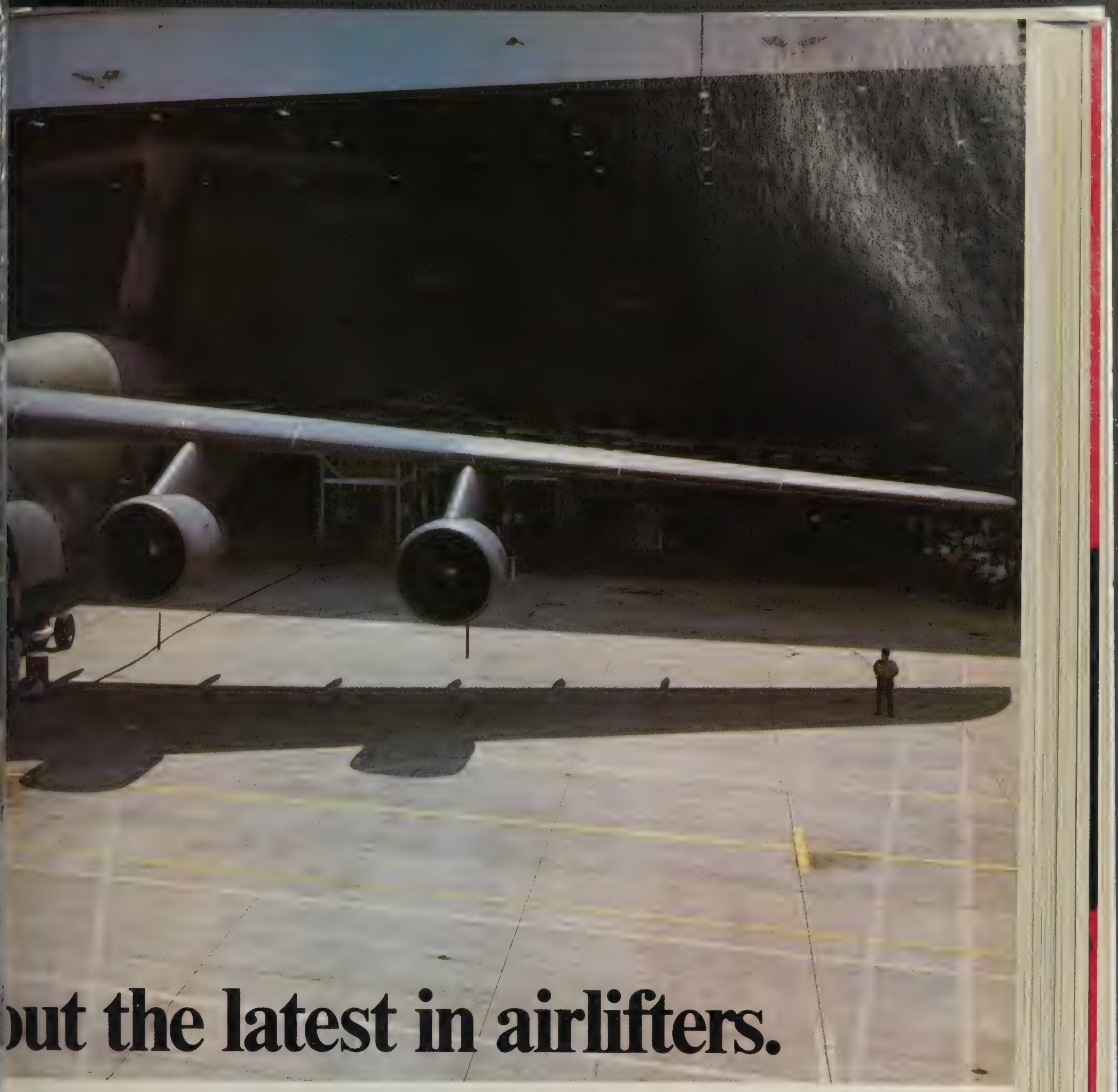
Advanced production techniques have given shape to an advanced new airlifter.

The first USAF C-5B has rolled out on time and within cost projections at Lockheed-Georgia. Throughout its assembly, sophisticated technology has streamlined the airlifter's production and ensured the integrity of its construction. Lockheed's attention to quality assurance has created an aircraft with exceptional reliability. This helps the C-5B to move directly from rollout to early test flights, then on to delivery later this year, ready for operational service.

The C-5B incorporates design innovations throughout its structure and systems. Its airframe uses new alloys with enhanced resistance to corrosion and fatigue. Its flight deck is fitted with improved avionics. New engines with increased reliability have been installed, as well as lighter, more durable carbon brakes.

Innovative production control techniques and systems have been an important part of the C-5B program. A computerized real-time Assembly Status Tracking System has been important in keeping production on schedule and costs

Lockheed-Georgia



...out the latest in airlifters.

under control. Another Lockheed tracking system oversees first article product assurance. Together with new manufacturing procedures and an experienced work force, the efficiency of C-5B assembly has been exceptional.

In September, this new C-5B will take to the air. Before the end of the year, it will join the C-5As now serving with the Military Airlift Command. Each new C-5B will serve well into the next century, and contribute to a dramatic increase in America's ability to airlift virtually all of the Army's fighting equipment, including M-1 tanks, to any trouble spot around the world.

The men and women at Lockheed-Georgia, as well as Lockheed's suppliers in 43 states, can take pride in their role in bringing the C-5B to flight readiness. They have built one of the world's finest airlifters. And they have done it right on schedule.

Innovation

Giving shape to imagination.



ROTC cadets hug the ground on a Ft. Knox training range set up as an obstacle course swept by simulated enemy fire.

U.S. Army photo

ers and testers, cadets graduate and are offered scholarships.

Once a scholarship is accepted, the cadet incurs a military obligation of four to eight years, serving on active duty or in a Reserve unit. If a cadet fails to enter the Army as an officer, he or she may be required to serve as an enlisted service member.

There has always been a bridge between officers and enlisted men in the Army, but the bridge is torn down at summer camp. The hopeful officers are being trained by seasoned enlisted men. The sergeants, many from crack infantry and armor units, are the trainers, and their word is law. But the sergeants know that someday a cadet in their charge may be their leader, and they respect and admire the young men and women.

"The cadets at this camp are bright, intelligent and willing to learn," said S. Sgt. Richard L. Dahlin, a six-year Army veteran. "Many are going to be outstanding officers. They learn discipline and authority here, and those are two traits anyone in the Army must have. They grow up as people, and learn what an Army officer can and should be."

One cadet, Cynthia Henriksen from the University of South Dakota, attended training on crutches. She suffered a stress fracture in her right foot while running.

"I love the course," said Cadet Henriksen. "It's never boring. I've learned to be flexible—everything changes so quickly. I want to be the best person and leader I can be. The Army's my future." Cadet Henriksen plans to be off her crutches in time to take the required tests and graduate.

Donald J. Dobrzelewski, a junior majoring in mechanical engineering at Purdue University, is attending summer camp because he did not take military science classes as a freshman or sophomore and wants a two-year scholarship.

"I heard ROTC was unpopular a few years ago, but it isn't here now," he commented. "Even my fraternity brothers are proud of me." Cadet Dobrzelewski has a brother who also attends Purdue, and he, too, is enrolled in the ROTC program.

The cadets are paid $672 for their six weeks of training during summer camp. They also get free room and board and travel expenses. If a cadet quits, he only gets travel money home.

In 1984, 4,052 students attended basic camp. A total of 3,640, or 90 percent, successfully completed camp requirements. They, therefore, were eligible to continue in the ROTC program and attend advanced camps after their junior years.

In addition to regular college classes, ROTC cadets are taught leadership skills, written and oral communications, military law and justice, preventive medicine, first aid and international law at their home schools. By the time they are seniors, they will have learned much about the Army system, ethics, intelligence gathering and the Soviet army.

David T. Kendall, a junior at Ball State University, said that ROTC cadets must maintain high standards at school and keep grades up.

"We're asked to try for 3.0 grade-point averages—mine is 3.2—but 2.0 will get us through the program both on campus and with ROTC," he explained. "It's gratifying to know, though, that many of us hover near that 3.0 mark." Cadet Kendall is 21 and, when not in school, lives with his family in Elwood, Ind. He is single and majoring in natural resources.

Upon graduation from college, cadets are commissioned second lieutenants in the Army or Army Reserve and incur military obligations. The new lieutenants are offered duty assignments in many fields, to include the basic strengths of the Army: infantry, armor, artillery and air defense artillery. There are other fields to which they can be assigned, including administration, the Army Corps of Engi



Photo by PA1 Ed Moreth, U.S. Coast Guard

Cadets practice what they have learned about small-unit fire-and-movement in an assault on an 'enemy'-held hill.

neers, aviation, intelligence, transportation, medical and medical support, the Army Nurse Corps, Veterinary Corps and military police. For some, there are the Judge Advocate General's Corps and the finance and automatic data processing fields.

"ROTC is educational, and gives me the opportunity for hands-on training. I want a challenge in life, and I'm hoping that through ROTC I get a commission in the Army Corps of Engineers," said Cadet Kendall.

SFC Northern, a hardened 16-year noncommissioned officer, has been teaching the cadets basic military skills, drill and ceremony, and rifle marksmanship. He has seen changes in each cadet during the six-week camp:

"When they first arrive, many look scared. This is a new adventure, and it's filled with great expectations. These folks don't know anything about the Army, and have no idea how physically tough Army life can be. But once into training, they become very motivated and interested. By the time they graduate, they are dedicated. They've matured as adults, and are ready to pursue careers as commissioned Army officers."

Joseph Gabriel, first sergeant of C Company, has the responsibility to oversee the daily activities of all cadets assigned to his company.

"We started with 161 cadets," said 1st Sgt. Gabriel, "and hope to graduate 143. The Army needs good officers, and the men and women of my company and I are going to do our part to fill the ranks. You know, the women here surprise me. They're tough, and they don't quit. I like that."



U.S. Army photo

Cadets cooperate in rolling a barrel across a creek fraught with simulated booby traps, one of the many confidence-building exercises in basic camp.

Silence, Please

During basic training at Camp Van Dorn, Miss., I came upon my first sergeant, a taskmaster of the old school, informing the men of his standards for military courtesy. "When the captain comes into the area, I want to hear nothing but absolute silence." He glowered at them in his best no-nonsense style and then added, "And very little of that."

HENRY HENN

By Maj. Gen. John G. Appel
U.S. Army, retired

The Risk Factor In Shaping U.S. Defense Policy



The military has the duty to define and explain to the public the imbalances in our posture that could make us vulnerable to a hostile world power.

One of the major tasks of the military is to define the security risks to our nation and our way of life. Preserving our freedoms is not easy, for the basics of our democracy often run counter to maintaining an adequate defense posture against a totalitarian state such as the Soviet Union.

Public debate often places the United States at a disadvantage in providing for defense, maintaining proper security of defense strengths and weaknesses and negotiating with allies or potential enemies.

On the other hand, regardless of the difficulties, another task of the military is to explain the security risks factually and in terms that can be understood by the public.

To complete this task successfully, the military needs the support of the news media to help inform and educate the public, including elected officials.

Balancing political, economic and national security factors is clearly an art rather than a science. "How much is enough?" and "Can we afford it?" are two questions that continually confront everyone, especially decision makers.

While attempting to address these questions, emotions can run high. The rhetoric often gets out of hand, and adversary relationships develop that are not in the national interest. In the process, there is an increased probability that national security risks will be overlooked or lost in the debates. Should those risks, which translate into vulnerabilities, be exploited by an enemy, our democracy and our way of life could be placed in jeopardy, depending on the magnitude of the vulnerability.

The definition of risk is, at times, difficult, but one way to start might be to establish degrees of risk. From this, priorities can be established and actions taken in a timely fashion. Three levels of risk



Photos by Steve Crawford

ome to mind—acceptable, calculated and nacceptable.

As attempts are made to balance na- onal political, economic and defense in- erests, forces in each area create imbal- nces. When these basic national factors et too far out of balance, national sur- ival is placed at risk.

The challenges vary, but none are more erious than imbalances in defense. If de- ense fails, there is no tomorrow; all of ur freedoms are threatened.

Currently, the national debt issue makes efense a vulnerable target. "How much s enough?" is being asked, all too often vithout examining the risks carefully and aking prudent, responsible and timely esponses to those risks.

Many presentations have been made to illustrate national security issues or the spectrum of threats graphically; however, these portrayals are by their nature oversimplifications. They do not identify vulnerabilities or make the important distinction between risk and consequences.

Assessment of risk should be specific to be meaningful. To do this, it is necessary to relate both probability and consequences to risk and then add a fourth factor of readiness. The military threats to peace and national security, as well as survival and winning, need to be identified in sufficient detail so that they are not buried and ignored by accident or design.

As a minimum, the following nine threats need to be included and examined:

- Terrorism
- Unconventional warfare
- Minor conventional warfare
- Major conventional warfare
- Major conventional and chemical warfare
- Theater nuclear warfare
- Strategic biological warfare
- Strategic nuclear warfare
- Space warfare

Conventional warfare could, no doubt, be included in varying degrees and levels of intensity in every category. The same might apply to chemical warfare since it has application in a wide range of conflict, as we have seen in Soviet activities recently. Electronic warfare has wide application, and biological warfare might also be employed at the lower levels of conflict.

The point is that the possibility of exceptions always exists, but national defense must be geared to the probable with special attention given to any areas or threats where the risk to national security and survivability is unacceptable. Such instances exist today.

Another point to be made is that categories of conflict or threat mean different things to different people. For example, a military planner might well limit his thinking to three general classes or threats. Under this approach, conventional warfare includes both minor and major conflict.

It also includes electronic warfare, chemical warfare and possibly even tactical biological and nuclear warfare. The Soviets do include chemical warfare (CW) as conventional in their doctrine.

Unfortunately, few, if any, outside the U.S. military think this way, and many in the military do not think this way. It is safe to say that nonmilitary people make sharp distinctions and do not include CW, for example, as part of their definition of conventional warfare. The American public and press do not. Because of the horror stories about chemical warfare, most stemming from World War I, it is viewed as especially abhorrent and barbarous and is separated from conventional warfare.

Notwithstanding the real military effectiveness of CW and the fact that injury or even death from chemicals are most often more humane than those caused by so-called "acceptable" conventional



Mortar training in gas masks: the Army has stressed chemical defensive measures in recent years, but the offensive stockpile is all but unusable.

weapons (bullets, bayonets, shrapnel and even flame), emotions run high at the mention of CW. It is a moot point, but there are those who insist that killing in war must be "acceptable and humane"! Only the old-fashioned ways seem acceptable.

Of special concern to those involved in national security should be the fact that most governmental executives and members of Congress do not consider CW as "conventional." Unless CW is given recognition in a clear and factual way, experience shows that neglect will result.

Therefore, there is a clear danger in grouping types and categories of weapons systems and conflict when those whose understanding and support are needed view it differently. It is a case of misunderstanding because the risks are not clearly defined. As a result, threats to national security, deterrence and peace can be overlooked or neglected. It is losing by default!

The chart entitled "Risk Assessment in the Spectrum of War" attempts to present risk in a way that highlights each level and especially unacceptable risks. The green area represents *acceptable risk*. It represents prudent and responsible recognition and preparedness. The yellow areas represent *calculated risk*.

Calculated risk should be recognized for what it is. It represents a danger to national security and usually results from competition and trade-offs for available dollars within budget resources. To fail to recognize unsupported defense requirements as a calculated risk is to deceive. To amend requirements to match resources or ceilings is dishonest. To label risks otherwise or disguise them is irresponsible. Cover-ups do not serve the national interest.

The red area represents *unacceptable risk*. To permit aspects of national security to remain in this area represents criminal negligence by those responsible for providing for the national defense in any way.

The chart suggests that readiness for terrorism is in the calculated risk area because there is simply no practical way to prevent it. It can be limited and, to a degree, controlled but it cannot be eliminated. Regardless of the publicity it receives, it does not constitute a threat to national survival.

Unconventional warfare may, perhaps have to be accepted, given the unres and "causes" being pursued throughou the world. Militarily speaking, unconven tional warfare is very difficult for a con ventional force to counter, even whe there is a clear mandate and full politica and military support of the conventiona force to engage and win. Otherwise, th conventional force is denied its full capa bility to engage and destroy the enemy

To have to engage the unconventiona force on its terms—without the authorit or ability to exploit the material and tech nical capabilities of the conventional forc —is to repeat the experiences of the Unite States in Vietnam. The risks are calculate and could be significant, even unaccep able.

Minor conventional warfare poses sub stantial calculated risk. Given the wid range of interests and degree of involv ment of the United States throughout th entire world, it is quite conceivable tha U.S. forces could face a combination security interests and national commitmen

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MAJ. GEN. JOHN G. APPEL, U.S. Army, retired, served 33 years in chemical and logistics assignments. He received a bachelor's degree in 1941 in chemical engineering and was commissioned in the former Chemical Warfare Service Reserve. After serving with several chemical depots in Europe during World War II, Gen. Appel graduated from the Command and General Staff College and was commissioned in the regular Army. From 1946 to 1958, he held several staff positions in the Chemical Corps. He served as commanding officer of the Pine Bluff Arsenal in Arkansas from 1962 to 1964; commanded the Deseret Test Center, Ft. Douglas, Utah, from 1966 to 1969; and served as director of Chemical and Nuclear Operations in the Office of the Assistant Chief of Staff for Force Development from 1970 to 1973. When he retired in 1974, he was serving as director of logistics, J4, at Headquarters, U.S. Army, Europe.

hat call for numbers that exceed the orces available. However, conventional orces equipped with modern material in uantity are improving after a consider- ble period of neglect.

The assessment of the risk of minor onventional warfare needs continual re- iew, particularly as it might contribute r lead to greater risks with even greater onsequences and unacceptable risk.

Major conventional warfare readiness rises into the unacceptable risk level because of the magnide of the conventional warfare capabily of the Soviets and the Soviet objecves. Soviet forces exceed several times ver those required for either defense gainst or response to any provocation y the United States or NATO. The risk this level of intensity in the spectrum f war is large and unacceptable.

A major unacceptable risk would come a major war involving conventional nd chemical warfare. This is a clear danger to national security. The one-sided dvantage in mobility we are giving away the Soviets because of our totally indequate retaliatory capability in CW is a sgrace. It is a vulnerability that invites tack with CW by an enemy—especially he well prepared for CW.

While we hope to deter CW in particur and all forms of war in general, we an have no assurance without a credible taliatory capability for use should derrence fail. We cannot realistically der or effectively counter CW without a W response that is balanced defensively nd offensively. As is, we cannot support national policy.

Given the obvious advantage in CW, is difficult to imagine that the Soviets ould not initiate CW along with other nventional weapons. Gen. Frederick J. roesen, U.S. Army, retired, former comander of U.S. Army, Europe, stated the oint this way after having studied Soet CW doctrine and capabilities as a ember of an allied team of very senior fficers: "If I were a Soviet military comander, I would have great difficulty not commending the use of CW in support my operations. NATO simply does not ave the means to retaliate with chemical eapons."

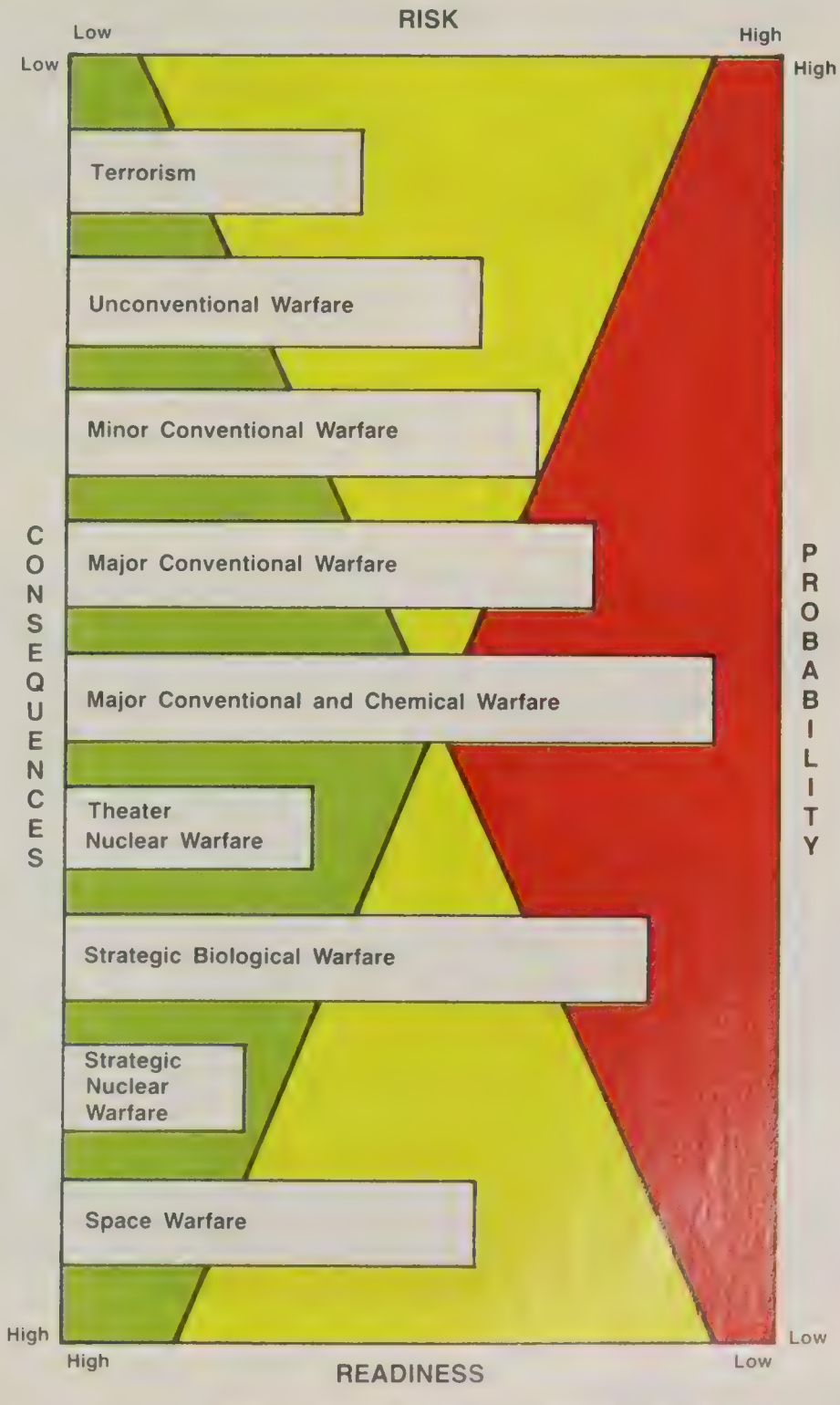
As long as unacceptable vulnerabilities nd risks exist in major elements of the hole, the whole is vulnerable. To send en into conflict without an acceptable ance to survive an initial attack and in should be unthinkable. Such is the se with regard to our CW deterrent stockpile, however, which is inadequate by every meaningful measurement.

The United States' last experience with toxic warfare was in World War I, and we were totally unprepared. Just after that war, Gen. John J. Pershing said, "Whether or not gas will be employed in the future is conjecture but the effect is so deadly to the unprepared that we can never afford to neglect the question." We were prepared during World War II, and CW was deterred.

Today, we are again unprepared and neglecting the question. Some lessons from history seem to escape us and could return to haunt us. Although vulnerability in CW increases the risk of nuclear war and the initiation of CW by the Soviets might trigger a nuclear response, even such a response may be too late with planned targets vanished and the risk of strategic nuclear exchange heightened. The United States should avoid placing its president in a difficult, limited-option position. An enemy needs to face a spectrum of threats.

The U.S. tactical nuclear deterrence capability will be adequate if kept modern but may be a weapons system that is never used. Nuclear systems may well become, if they have not already, a "nuclear deterrence insurance policy," just like the "chemical deterrence insurance policy" that existed during World War II and again in the 1960s. Such insurance policies are costly and difficult to maintain from a number of points of view but are absolutely essential to national security and survival. We can ill afford to neglect the consequences.

Risk Assessment in the Spectrum of War



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Students don chemical protective gear in a training gas chamber at Ft. Benning, Ga.; experiencing the presence of tear gas is a powerful motivator for putting instructions into practice as quickly and as correctly as possible.

Biological warfare (BW) on a large cale can be decisive for the initiator and disaster to the unprepared. While BW nay seem even more abhorrent than CW o many, the fact remains that it is tech-nically feasible and the Soviets are deep-y involved in it. While we unilaterally bandoned offensive BW in 1969, they lid not.

Our "defense-only" policy needs to be eexamined. It cannot be effective over ime. Although the probability of BW nay be low, the consequences are high, nd a surprise attack could be catastroph-c. Our vulnerability is unacceptable, and grows as more and more is done in enetics and bioengineering.

Like it or not, abhorrence should not e a substitute for prudence. Treaties do ot offer assurance unless they are verifi-ble. The Soviets have shown little sin-ere interest in a treaty in CW or BW ver the past several decades. And why hould they, in view of their advantages nd our weaknesses? No treaty is prefer-ble to a bad treaty or a treaty for the ake of a treaty. Our inability to cope ith the BW threat is an unacceptable isk.

Our strategic nuclear capability is in the acceptable area but, as for tactical weapons, it must be kept modern. The tactical weapons must be kept free from countermeasures, including those in space; however, the current cumulative destructive power is such that deterrence is achieved because the consequences to both sides are unacceptable. This may be another example of an essential "insurance policy" and never anything more.

An effort to utilize space as a strategic means of preserving peace, deterring war or countering space weapons or defense systems is a proper goal for the United States. It would be folly to ignore space or abandon it for the exclusive use of a potential enemy. Enough is already known to confirm the need to address this possible threat. As a minimum, it should be kept as a calculated risk and prevented from becoming an unacceptable risk.

The day may come (or may be here now) when space, strategic and even some tactical weapons systems of major world powers are mutually deterring. In spite of this, or because of it, it is conceivable that violent conflict with national survival at risk could be undertaken involving major powers using conventional weapons, including CW, under an "umbrella" of strategic mutual deterrence.

In summary, today our national defense capability contains unacceptable risks—our conventional force levels, our CW retaliatory capability and our defense-only policy in BW. These vulnerabilities weaken other defense systems, making them suspect and more vulnerable. They weaken our overall ability to deter war. It is dangerous and unwise to "hide" CW and BW in a general category of war or threat, as this only plays into the hands of the critics, gives many an out to ignore the risk and increases the probability of further negligence.

Nations that default on the "premiums" for their defense insurance policies will find that those policies lapse and, with that lapse, national security is made vulnerable. Our premiums are past due in several areas of defense.

Deterrence can be achieved only through strength and, should deterrence fail for any reason, every American fighting for our freedoms and way of life needs and deserves a chance to survive and win against whatever threat or combination of threats the enemy poses. The threats are now. Positive, timely responses by the news media, Congress and the military need to be forthcoming before it is too late.

Illegal Shipment?

While preparing last summer for my reassignment from the U.S. Military Academy to the 3rd Infantry Division (Mechanized) at Aschaffenburg, West Germany, I was taken aback upon reading an amendment to my permanent-change-of-station orders.

The amended orders informed this Ranger-qualified infantryman that (as I expected) my dependents were authorized to travel to a designated location, as was shipment of my household goods up to the standard weight allowance. Reading on though, it appeared that I would not be able to accompany my family and personal belongings to Europe.

The orders continued: "Washers, dryers, *rangers* and refrigerators are government furnished and will not be shipped."

MAJ. CHARLES E. LIBERSHAL

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82nd Airborne: Friend in Need

By Col. Barney Oldfield
U.S. Air Force, retired

Marlene Dietrich's mother, Frau von Loesch, was only one of many problems encountered by the 82nd Airborne Division in World War II but handled in such a manner that makes old-timers from that fighting outfit get teary-eyed even yet.

The 82nd sustained heavy casualties as result of its steadfastness in the face of he enemy. Its paratroopers accumulated Congressional Medals of Honor, Distinguished Service Crosses, Silver Stars and Bronze Stars from the American government, and decorations from The Netherlands, Belgium, the British Empire, France nd the Soviet Union. Of its casualties, everal thousand are buried in the graveards of Africa and Europe.

But Marlene Dietrich's mother?

Marlene Dietrich, when she entertained roops along the front (she played a saw, elieve it or not), told all combat troops nd war correspondents that whoever





Marlene Dietrich signs autographs for troops of the 317th Infantry, 80th Infantry Division in France, October 1944.

got to Berlin should go to an address she would give them and ask for Frau von Loesch. She then asked that word be sent to her if Frau von Loesch was alive.

Lt. Gen. James M. Gavin, U.S. Army, retired, then the division's commander, and I were two who heard Miss Dietrich's request. Another, Lt. Col. Albert McCleery, has since died.

Col. McCleery and I were in the first American column to enter Berlin on 1 July, 1945. Once inside city limits, Col. McCleery made a beeline for the von Loesch address, found Miss Dietrich's mother alive and well, but meagerly fed and caring for a 95-year-old aunt.

Word was sent to Paris to her daughter, who immediately caught a flight to Berlin on the military shuttle, as she was in the USO then. When her estimated time of arrival was known at Berlin's Tempelhof airport, I gathered up Frau von Loesch and two photographers, and took them to meet her.

Frau von Loesch was instructed to stand alone on the runway's great cement apron, and I asked the tower to have the shuttle taxi up to her. When her daughter burst from the plane, it made for one of the most touching reunions of the war.

Later, when Gen. Gavin and I were in London, two terrible messages were forwarded to us—the Army had selected the 101st Airborne Division to be the regular Army's postwar airborne unit so the 82nd would be dismantled and Frau von Loesch had died.

As our plane flew us back to Berlin, Gen. Gavin, soft-spoken as always and with his own grief about seeing the division which was so much a part of him consigned to oblivion, turned to me and said: "Do everything you can about her." He did not say her name, but it was obvious that he meant Frau von Loesch. After all, the nonfraternization regulation was in existence, and no legal interrelationships were possible between Americans and Germans, even concerning burial of the dead.

Once on the ground in Berlin, we learned that Miss Dietrich was flying in. There was not much time. I got four 82nd Airborne Division paratroopers to go to a nearby cemetery and dig a grave. A German undertaker was contacted to perform his role, which included the hiring of three professional mourners, who were part of such ceremonies.

Under the cover of darkness, the four paratroopers went to the second-floor flat once occupied by Frau von Loesch where her body lay in a plain coffin. They took the coffin down the steep stairs, placed it reverently in a truck and transported it to the cemetery, where it was placed in the grave. The sun was about to come up on the dreary scene, so they went into hiding.

Marlene Dietrich arrived, escorted by *Time* magazine war correspondent William Walton. He had jumped with the 82nd in Normandy, and, since he was a member of the press, attending a German funeral would not be held against him. The grave-side finalities were short. Miss Dietrich cried constantly. At the end of the service, she and William Walton cast handfuls of dirt on the coffin, turned their backs and walked away.

That night, the four paratroopers filled in the resting place. It was a macabre scene, as the cemetery had been heavily bombed by artillery. Only the grave of Frau von Loesch was intact.

To this day, Marlene Dietrich loves every member of the 82nd Airborne Division. They could do anything—and did—including giving her mother a decent burial, no matter what the regulations said.

Not many know this story. So many war correspondents then in Berlin wrote stories which questioned picking the 101st over the 82nd that the headquarters of the Army ground forces switched signals and saved the 82nd, thus canceling the 101st. To live in the 82nd's neighborhood was to be engulfed by the specialness of it; even the hard-bitten press types were.

Those who served with that division feel sort of sorry for all who do not know what it was like to have been in an outfit like that.

COL. BARNEY OLDFIELD, U.S. Air Force, retired, served in Army public affairs during World War II, has been a radio commentator, a press agent and is the author of several books. He wrote this story for release during an 82nd Airborne Division Association convention in Houston, Tex. Ivan F. Woods, of the Texas Lone Star Chapter of the association, recently forwarded the story to ARMY.

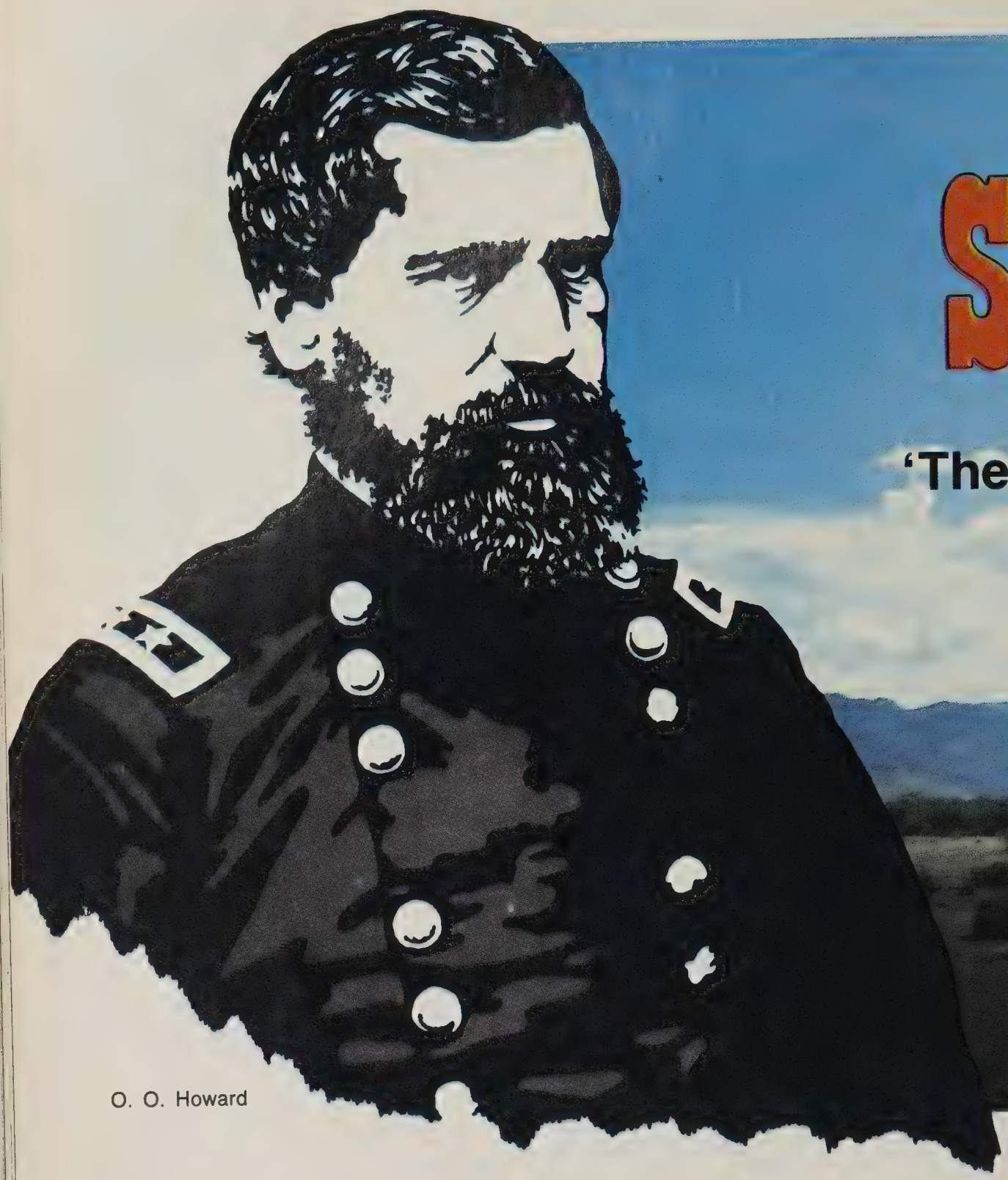
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O. O. Howard

Stalking

'The Christian Gener

By Gerald Weland

Frequently derided as a humbug and a prig, this Civil War hero displayed an entirely different kind of high valor a decade later on a lone mission of peace into the legendary heartland of a mysterious enemy.

The arm hurt like hell. It gave him more agony now, ten years after h lost it, than it ever did attached t his body. Such a phenomenon was no unusual, but that did nothing to ease th pain. Still, he thrust the pain from hi mind. Nothing else mattered except th mission.

He surveyed the gray-green vastnes spread out before him: the Dragoon Mour tains, early-day cavalry had dubbed them He had no idea what the denizens calle them, except home.

They would be watching, of course those lean, emotionless men wearing head bands, leather britches and perhaps buckskin vest or ragged shirt. Some we on the distant ramparts. Some would b closer, skulking among the sandy, scru covered hills to his front, swift as stri ing rattlesnakes but more silent and twi as deadly. Stealth, raiding, pillage, bloo



Cochise

hed—these were not part of their heri-age, but rather its entirety. In nearly 40 ears of constant strife, they had man-ged to make their very name a synonym or terror in the Southwest. Apache! But hen, they, too, were a part of the mis-ion.

Everybody in any position of author-ty in the Arizona Territory had warned im against this trek. There was no guar-ntee of his safety. The two Indian scouts, once and Chee, were not expected to urn on him, but neither were they likely o die defending him. The other man, om Jeffords, was the key.

Nobody knew much about Tom Jef-ords. He claimed to have been a part of ol. James H. Carleton's California col-mn, which had marched east to join the ivil War in 1862, only to end up blast-ng its way through Cochise's minions at pache Pass and staying on to garrison the territory. Tom Jeffords said he had served with their artillery, now famous in Apache lore as "The Wagon Guns," but nobody, himself included, had of-fered much proof.

There were rumors about Tom Jeffords, some more than just whisperings. That he knew Cochise and had entré to his legendary Stronghold was never denied. It was why that bothered many people. Some suspected he had made his fortune selling ammunition to the dreaded raid-ers in exchange for stolen livestock, but he genuinely sought peace on behalf of his Indian friend. That made him, too, a part of the mission.

Slowly, the blue-clad figure took the reins in his teeth and reached his left arm back to feel for his most comforting pos-session. It was still secure in his knap-sack, square and bulky. He ignored his gun completely. Then he rode sedately on.

The mission moved steadfastly ahead of him. . . .

Oliver Otis Howard had been born in Maine in 1830, spawned by people as dour and rock hard as the soil they tilled. His religious fundamentalism had been part of his psyche throughout life. Since the Civil War, it had become predomi-nant.

He had graduated from the U.S. Mili-tary Academy in 1854, 4th in a class of 46. His early service was mainly in east-ern arsenals and as a math instructor at West Point. In June 1861, he took com-mand of the 3rd Maine Regiment in the War of the Rebellion. By 1862, he was commander of the 1st Brigade in Maj. Gen. Edwin V. Sumner's Division. It was then, at Fair Oaks during Maj. Gen. George B. McClellan's abortive Peninsu-la campaign, that he had been seriously wounded, not once but twice.

He should never have survived. A shattered arm had to be rudely hacked off to give him any chance at all. But Col. Howard was made of stern stuff. He lived to fight again, but also to serve a different cause. The living owed good works to God, as well as faith. He would serve the Union faithfully from 1863 on—but something over and beyond that as well.

He still saw plenty of combat, first at Chancellorsville as commander of the XI Corps and then with Brig. Gen. George G. Meade at Gettysburg. Shortly thereafter, he was transferred to the Army of the Cumberland, becoming one of Maj. Gen. William T. Sherman's most trusted aides during the Atlanta campaign and earning promotion to brigadier general in December 1864. Both men truly believed that war was hell. Gen. Howard, however, did all in his power to spare even the enemy the worst examples of it.

When the hostilities ceased, he had a promising career open to him. Indeed, he never formally resigned from the Army. When he finally retired in 1894 as a major general commanding the entire Division of the East, he was one of the most senior men in the American military.

Yet a different brand of service, possibly even his true niche in life, irresistibly beckoned. That he had been one of just 15 men officially voted the Thanks of Congress after Gettysburg barely registered on him. The Medal of Honor awarded for his action at Fair Oaks was never more than a piece of metal and a ribbon.

By that time, he had long since put the war behind him, choosing instead to clutch its cause to his bosom with equal ardor. On 12 May, 1865, he became commissioner of the Freedman's Bureau. Although the employment was an all-consuming passion, it soon became evident that his administrative ability and zeal could not overcome the inefficiency and outright corruption of his underlings. Trouble and investigations wracked the agency through 1872, although none of it ever attached to him. By then, of course, he had already founded and was serving as president of the nation's first Negro university in Washington, D.C. To this day, it bears his name.

In fact, as he slowly wound his way towards the Stronghold of the famed, fabled and feared Cochise that blistering autumn day in 1872, he still was president of Howard University. His days were filled with a different mission, however. A new group of belabored, battered Americans awaited his efforts as government representative.

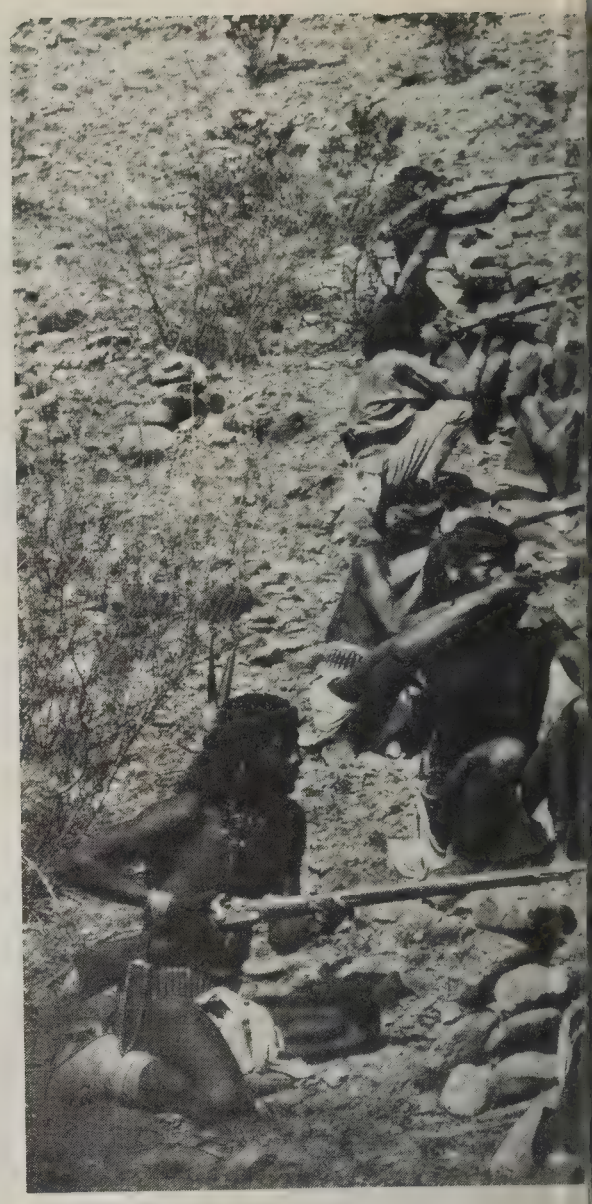
The administration of President Ulysses S. Grant, repelled by the possibility of endless frontier strife, had sincerely opted for a policy of peaceful coexistence with the western plains Indians. Gen. Howard set forth as a government plenipotentiary to pursue mankind's most merciful goal.

With precious little thanks.

So far, the efforts of "The Christian General" had been greeted with decidedly mixed opinions. Nobody, it seemed, was terribly interested in peace except him.

The citizenry of Arizona had derisively dubbed compassionate Vincent T. Colyer, territorial Indian commissioner, "Vincent the Good." Their opinion of a man who they regarded as "a one-armed, eastern evangelist" who proposed to offer Cochise peace with honor need hardly be spelled out.

Lt. Col. George Crook, who had already earned the nickname "Gray Fox" for his Indian fighting exploits, saw little chance of success. A year older than Gen.



Howard and vastly more experienced in chastising such deadly warriors, he viewed any attempt to generate a feeling of amity in the territory as little short of "humbug."

Officially, relations between the two men were "harmonious" when peacemak



Ft. Apache, Ariz., as it appears today, in the middle of an Indian reservation; originally known as Camp Ord, this was Brig. Gen. Howard's first stop on his peace mission of 1872, and the small barracks (on the left) *dates from that time.*

GERALD WELAND received his bachelor's and master's degrees from Chapman College. After serving four years in the U.S. Navy, he worked as a federal investigator in the field of national security. Since 1977, he has run his own business and done writing on historical subjects. He lives in Carlsbad, Calif.



Apache Indian Scouts working for the Army in Arizona, in a posed photo; most are armed with breech-loading Springfield rifles, a few with carbines.

Photos: The Bettmann Archive

Howard reached Ft. Apache with Pres-
ent Grant's edict. There is little doubt
at when Gen. Howard left to pursue
eace, Col. Crook was certain he would
ever see his colleague again, although
did his best to make the mission a
ccess.

It seemed that the Apache were not
rticularly interested in giving up the
ruggle either. Gen. Howard's first trip
est had culminated in a meeting with
me of their leaders, including the aged
rivaipa Eskiminzin, at Camp Grant in
ay 1872.

Cochise had led those who stayed away
droves. One can hardly blame them.
actly a year earlier, a group of drunk-
Pima Indians and Mexicans under a
edy Tucson rancher named Oury had
assacred 150 peaceful Apache in the
me location, carrying 29 children off
to slavery as trophies. As a result, there
ere no longer any peaceful Apache in
rizona.

Disappointed at the turnout, Gen. How-
d had grandiloquently asked if it were
t possible to visit Cochise in his lair.
rivaipa Eskiminzin, who nurtured a
rly disposition at the best of times,
as in no mood to cooperate. "Not un-
ss," the old warrior snarled, "you are
ady to die!"

Nobody knows if Gen. Howard sought such martyrdom or not. The two books he wrote about his life are filled with Biblical quotations and religious reflections which less-sensitive critics have scoffed at ever since. He rarely speaks of death, and it seems unlikely that it was a part of what he conceived his mission to be. On the other hand, he was not a man to be daunted by such a venomous response.

Now on this dark, dry, dangerous, final dawn in the fall of 1872, the general who preferred reason to rifles as a shield had come to meet the man who would make that mission a success. His small party entered the western, or San Pedro, entrance to the Stronghold. They saw no Apache, which was precisely what one could expect to see when being watched by them.

Without pause, they rode on, along the nearly six-mile route that wound its way through rocky outcroppings and scrub-shrouded hillocks into the heart of



Maj. Gen. George Crook, then serving as a lieutenant colonel, was skeptical about the possibilities of peace in the Arizona Territory.



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Typically rugged terrain inside the 'Stronghold' of the Apache war leader, Cochise.

the "impregnable" bastion of Cochise.

To this day nobody knows precisely how many Indians were there at the time. Sporadic water sources always prevented great numbers for any length of time, and the Stronghold was always more refuge than fortress. Still, should Cochise give the order, there were more than enough hostile Indians willing to terminate the mission of Gen. Howard forever.

Little is known of Cochise today. Physically, he stood six, ramrod-straight feet tall and possessed a large nose and melancholy demeanor. He was a Chiricahua —and a warrior of no small repute.

Today, Cochise is the quintessential expression of the noble savage concept, even in Arizona where his ravages were best known. No other Indian leader has his own town and county named after him. Yet he owes much of that image to the one-armed soldier-chief he was about to confront.

It is often tossed about by "revisionist" historians that Cochise was driven to war in January 1861 by a "blundering officer" named Lt. George Bascom during a dispute over some hostages and stolen livestock. There is, however, no evidence that he was quite that pristine. He was already a warchief among the Apache, and such a rank was not achieved through enlightened, philosophical oratory. His mentor was Mangas Colorado, whose hatred for the white man remained undying even years after his flogging by miners at Pinos Altos, N.M.

It is almost certain Cochise was part, if not the actual leader, of the Chiricahua raid which nearly obliterated the mining town of Patagonia, Ariz., as early as 1859. His most famous stand had been at Apache Pass against Col. Carleton. The resultant death of Mangas Colorado allowed him to assume the mantle of leadership throughout Apacheria. For a decade since then, Cochise rampaged through Arizona and Mexico.

For whatever reasons, Geronimo remains the symbol of wily ruthlessness throughout the Southwest. But he must have learned his lessons someplace. Cochise may not have led every raid or overseen every atrocity. Neither was he noted for committing atrocities personally. Yet throughout history, soldiery has always reflected the character of its leadership.

In just the last few weeks, his warriors had slaughtered 13 Mexicans in Sonoita Valley. Shortly before that, they had raided as far west as Prescott, Ariz., stealing 2,000 head of livestock and engaging in numerous skirmishes with troops from Ft. Whipple, in which at least a dozen Apaches and several soldiers had perished.

Cochise's followers had staged their most recent coup in Davidson Canyon near Camp Crittenden. They killed an officer and captured an Army corporal. The latter was tied to a tree and slowly burned alive before his comrades discovered what was going on and could ride to the rescue.

The tree had scarcely stopped smoldering when Gen. Howard departed for Ft. Apache for his rendezvous with destin

As many of his detractors have poir ed out, we know only Gen. Howar version of what transpired in the Stron hold. But then, since he was the on man courageous enough to go there, can extend him the courtesy of assumi he did not fabricate anything.

The initial meeting, Gen. Howard a mitted, was brief. He barely had time mention his purpose before being cut o

"No one," the Apache leader gruf assured him, "wants peace more thar do."

If so, Cochise displayed no alarmi alacrity to rush into its arms.

"Ten days," Cochise informed Ge Howard. "I must call in my chief w riors. I cannot make peace without th advice."

And so the man with the mission wa ed. He waited through endless days sand-swept, enervating heat that even shadowy recesses of rocks in the Stron hold did little to dissipate. He wait through endless nights in which the mou tain wind turned the hideout from a f ing pan to a freezer. For nearly a fo night he waited. The alien environme the mixture of hatred and contempt obvious on every Apache face—noth discouraged him. The cause which h brought him was company enough.

Perhaps Cochise really wanted pea He could be moved by blood lust, h or, compassion or common sense, pending on his mood. Possibly the sp ter of endless conflict with the ever- creasing and persistent blue columns

posing him merely made it expedient.

Any leader worthy of the name could calculate that to accept peace via a paper was vastly preferable to having it imposed by a club. Cochise was generally unpredictable, occasionally bloodthirsty and always an Apache. Nobody, however, has ever described him as a fool.

This became apparent when the negotiations began in earnest, the participants sitting around a council fire in the Stronghold. Cochise declined to speak in English, forcing Tom Jeffords to translate from Spanish. His first question as to just why "the graybeard" was bothering them left Gen. Howard under no illusions as to the task ahead of him.

"The Great Father, President Grant," Gen. Howard patiently explained, "sent me to make peace between you and the whites."

Cochise again stated that nobody wanted peace more than he did.

Gen. Howard then proved that he could maneuver at a peace conference as well as on a battlefield. "Then," he replied quickly, backing Cochise into a corner, "we can surely have peace."

The particulars of the negotiation were sticky, but peace was had at last.

Gen. Howard assigned the credit not to himself but to the righteousness of the cause itself. Cochise probably thought it was the best deal available. For both of them, it probably was. The Apache were to have the homeland they desired, encompassing the Dragoon and Huachuca Mountains, even including Apache Pass, which Cochise swore to keep secure for the white man's use. Whatever faults he may have evidenced elsewhere, he proved a man of his word in that regard.

Gen. Howard returned in triumph. The mission had succeeded.

Unfortunately, he had not thought of everything. For that he has ever since received the condemnation of the citizenry, a phenomenon modern military personnel may not be totally unfamiliar with.

Gen. Howard had been unable to resolve the issue of Apache raiding into Mexico, an activity so engrained in their behavior as to be impossible to exorcise. Thus, it became inevitable that some bands of 'broncos," uncontrolled by Cochise, would devolve into old habits, with Americans supplanting Mexicans in their attentions.



The Bettmann Archive

The peace that Brig. Gen. Howard forged was brief: the Apache wars resumed in the mid-1870s and ended only with the surrender of Geronimo (foreground) *in 1886.*

By November 1872, Col. Crook had been forced to unleash nine separate columns to corral these renegades before peace could become reality. Though handicapped by a deadly plague among his horses, dubbed "Epizootic" for lack of a better moniker, he still put together the most brilliantly successful antiguerilla campaign in frontier history. His mule train supply system was still employed during jungle operations in World War II.

It was all made easier, if not actually possible, by the fact that the Chiricahuas, the backbone of Apacheria, remained quiet throughout.

When peace finally came, most believed it would not last a month. Yet it might never have been broken had not fate betrayed The Christian General who brought it to fruition.

In July 1874, Cochise, who had suffered for years from a digestive disorder, died in his Stronghold, attended at the last by the faithful Tom Jeffords. Within months, George Crook, by then a brigadier general, was detached from Arizona to help pursue the Sioux to the north. The policy of temperate behavior departed with both men.

The results were predictable. It was only after more than a decade of brutality that Geronimo surrendered for good. The tens of thousands of lives on both sides that Gen. Howard thought he had saved were squandered anyway.

Today, Howard University remains the only tangible memorial to Oliver Otis Howard. Otherwise, he is either completely forgotten or written off as an egotistical eccentric. Somehow, such a glib dismissal fails to give him his due.

Given the prevailing circumstances, Gen. Howard's penetration of Cochise's Stronghold must rate as one of the most awesome feats of valor in nineteenth-century Americana. He was the standard bearer for a brief era of governmental enlightenment which, had the policy succeeded, could have fundamentally altered the history of the American West.

However, neither side really gave it a chance. So the bloody denouement—from the lava beds of the Modocs through the northern plains of the Sioux to the arid wilderness of Apacheria and all points in between—became unavoidable.

The mission of The Christian General possibly did fail in Arizona. If so, that failure is the truest measure of his stature.

For in his time and place, men like Oliver Otis Howard could do nothing else.

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eflections On 60th Reunion

"The shadows are lengthening for me. . . ." These wonderfully descriptive words are from Gen. Douglas MacArthur's famous talk to cadets of the U.S. Military Academy on his last visit to West Point, after he d become an octogenarian. When my class entered plebes on 1 July, 1921, our superintendent was Brig. en. Douglas MacArthur. In May 1985, the West Point ss of 1925 assembled for our 60th reunion, with 15 togenarians present of 245 who graduated—which arked this musing reverie.

Octogenarian MacArthur had been cadet first cap- n and president of his class; one of our 15 octoge- rians was Maj. Gen. Charles E. Saltzman, our cadet st captain and class president.

Another classmate, Brig. Gen. James K. "Mike" De- mond, put our collective feelings into a freewheeling ic on a scroll, which we signed as a memento for r former class president, Charlie. The story told by e verses spans 60 years of service and several wars, ginning with the time "our alma mater spawned us the fray."

If you do not have what it takes, West Point can t give it to you. It does give you a good start, as ll as the obligation to live up to its standards.

As I looked at our beautiful parade ground and im- essive gray stone buildings against the backdrop of ggy mountains, within a great bend in the storied dson River, the inspiration and mystique of "The ng Gray Line" lifted my heart with pride in having rted my life in uniform here.

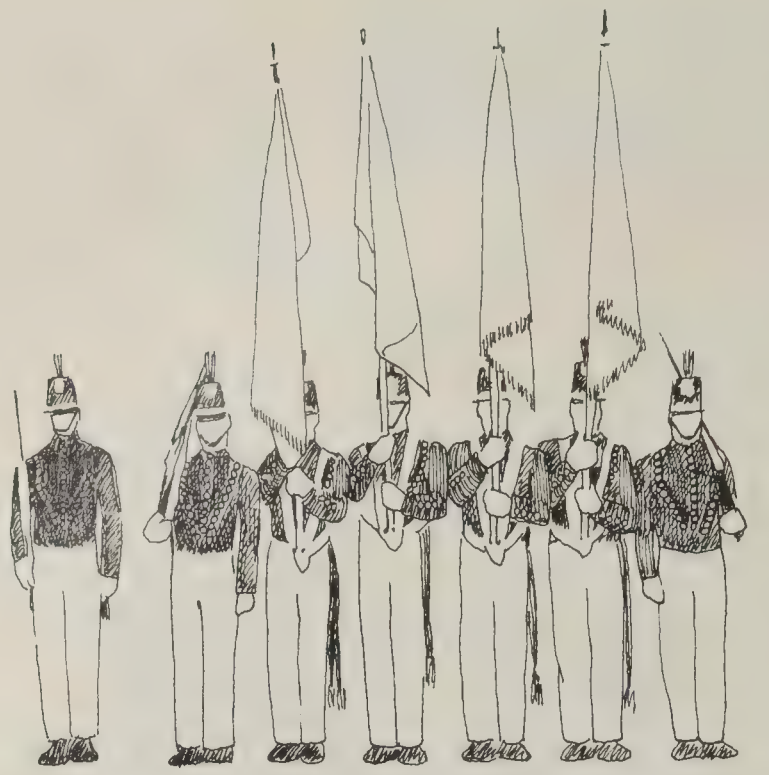
But other thoughts came also, putting West Point in rspective in relation to the overall Army. Here are ne of them:

- Gen. John J. Pershing's chief of staff in France ring World War I was Brig. Gen. James G. Harbord, ed as "the best appointment he [Pershing] ever made. more valuable man served in the American Expedi- nary Force." Gen. Harbord was not a U.S. Military ademy graduate.
- Gen. Dwight D. Eisenhower named Gen. Walter dell Smith, not a West Pointer, as his chief of staff.
- Gen. Douglas MacArthur selected Lt. Gen. Rich- d K. Sutherland, also not a West Pointer, as his orld War II chief of staff.
- Gen. MacArthur asked for Lt. Gen. Walter Krue- to command Sixth Army. Gen. Krueger selected l. (later Brig. Gen.) George Decker for his chief of ff, who would in due course become chief of staff, U.S. Army. Neither was from West Point.
- Gen. George C. Marshall, chief of staff, U.S. Army, during World War II, did not go to West Point.
- The present chairman, Joint Chiefs of Staff, Gen. John W. Vessey Jr., entered federal service as an enlisted National Guardsman and received a battlefield commission during World War II. Thus, like countless others, he "rose from the ranks."

So my pride as a member of The Long Gray Line is in perspective. But no words can describe my feelings as the four-abreast column of graduates, in order of seniority by graduation dates, marched to music by the West Point band across The Plain to the Sylvanus Thayer monument (honoring "the father of the U.S. Military Academy") for final ceremonies.

We then assembled, by class markers, for the Corps of Cadets to pass in review for us. As I looked around





and at the marching cadets, things were different in some ways from our day—but unchanged in substance and mission.

The preceding day, we 15 octogenarians went on a conducted tour of the post. At the cadet chapel, the world-renowned organ boomed out our alma mater. Memory supplied the words:

> Let duty be well performed,
> Honor be e'er untarned,
> Country be ever armed . . .

Not just for West Pointers, not just for men in uniform, those lines set the mission for all Americans in a troubled and uncertain world.

As we followed our schedule, the class of 1935 held their 50th reunion. This included ceremonies at the Soldier's Monument, an impressive memorial conceived and funded by the classes of 1935 and 1936. These ceremonies included a reading from the scriptures by my former lieutenant (Company G, 26th Infantry) and lifetime friend, Brig. Gen. Lester L. Wheeler. He concluded this way:

> We are assembled here in this hallowed place, our "rock-bound highland home," to once again honor members of our immortal Long Gray Line who can say (as did Saint Paul in his second epistle to Timothy):
>
> "I have fought a good fight,
> I have finished my course,
> I have kept the faith."

That states the fundamental mission of every member of our armed forces, wherever located or from whatever source obtained.

In searching for a symbolic idea to end these musings about West Point, our armed forces and the America we are dedicated to defend, my mind turned to the 1984 Army–Navy football game. I had watched it on television, and the past came flooding back as I viewed the opening ceremonies. After the game, I went to my desk and penciled this thought to remember:

> When the twilight is here, you can stand on shaky legs in front of the television in your living room—as I did today, right hand over my heart—and participate in absentia in the opening ceremony of the Army–Navy football game of 1984.

On the screen gleamed the colorful picture of an erect young military figure in navy-blue uniform and white cap, standing at the microphone on one edge o the field. As his resonant voice rolled out those mag nificent words "Oh, say can you see!" a tremendou American flag, custom made to the size of the footbal field, was gradually unrolled to cover it, thus bringing to vivid visual life the words "whose broad stripes an bright stars."

On one side of the tiered stands, rank on rank o gray-uniformed West Point cadets stood at rigid atten tion, hands at the salute, as they looked across at th tiered stands of blue-uniformed, white-capped mid shipmen of the U.S. Naval Academy, also at meticu lous salute. . . .

If, at that moment, the Celestial Bugler had blow taps for me, it would have been a proud and symboli finale to my life as a soldier.

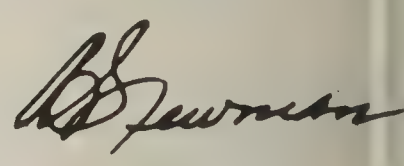
Three comments:

■ Memorials, pageantry, ceremonies, uniforms an disciplined control are all basic elements of militar life—not just West Point parades. Regardless of ou service branch or where or how we enter military se vice, we fight for the same objective under the sam symbol, our Stars and Stripes.

■ The most meaningful addition to the West Poin scene since our day is the Soldier's Monument, bearin these words on its massive base: TO THE AMERICAN SO DIER. Atop the base, done in bronze, is a dramat group of three American front-line fighting men. The animated alert postures and the symbolic forward ar swing are silent reminders that, without soldiers, thos other monuments to famous leaders would not be ther

■ When the colors passed during the review, tim turned back. I was a member of the cadet Color Gua for two years, and memory flashed from cadet yea to active duty to retirement. As I stood with my clas mates where it all began for us, this paraphrase of poem I once read somewhere in the dim past can clear:

> What matter the cost—in peacetime effort, in wartime stress and strain, family separations and finally the coping years in retirement—we would do it again.
>
> We have lived, we have loved, we have strived, we have endured, we have served . . . we have known.



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ecruiter Pay Increases

The Army is raising the special duty assignment pay for soliers serving as recruiters and career counselors on 1 October. he $55 monthly increase will affect some 8,000 soldiers. This the second special duty pay increase authorized this year for ersonnel in those specialties, with the earlier raise coming on April.

The increase is necessary to meet the shortage of noncomissioned officers volunteering for the duty. Under the new ay levels, front-line recruiters in their first 90 days on the job ill have their special duty compensation increased from $110 $165 monthly, those serving between three and ten months om $165 to $220 per month and those serving more than ten onths in that duty from $220 to $275.

Guidance counselors serving as career counselors will reive an increase of $220 to $275 monthly, regardless of time that assignment. Regular career counselors and in-service cruiters will see their monthly special duty pay go from $110 $165.

The Bulletin Board

rticle 15 Reenlistment Waiver

Soldiers with an Article 15 on their record will not have to otain a waiver from a higher command if they want to reenst, except for those with Article 15s given because of lost serce time, effective 1 October. The Army's deputy chief of aff for personnel, Lt. Gen. Robert M. Elton, has approved change to Army Regulation 601-280 which eliminates the aiver requirement.

Officials feel that in most cases the waiver procedure is not ecessary where a "good soldier" with an Article 15 already as the support of his command to reenlist.

In the past, such soldiers had to request waiver approval om a higher-level command than their own. For personnel rving at a general officer-level command, the waiver had to approved by the Enlisted Evaluation Agency in St. Louis, o. Soldiers at lower-level commands had to get approval om an official one grade above their own commander in the ain of command.

ospital Planning Recommendations

Secretary of Defense Caspar W. Weinberger has accepted d endorsed the recommendations of the "Blue-Ribbon Panel Hospital Sizing," which call for transferring military hospil construction planning from the individual services to the epartment of Defense (DoD). In its report to Mr. Weinberg, the congressionally mandated panel said DoD should make e final decision on when, where and how large to build miliry hospitals.

The panel noted that the services build hospitals without king into consideration future needs and the availability of her nearby military and civilian facilities. At present, ten ars may elapse from the time a hospital plan is drawn up til the facility is opened for service.

While the services generally justify their individual hospital nstruction programs in terms of wartime readiness requirents, the panel observed that there is currently no widely accepted means for formulating readiness needs in the event of war.

The panel recommended that DoD establish a single method to determine its future medical force requirements, with wartime considerations being the critical barometer. The panel stressed that the services should not build more facilities if adequate health care is already available within the local community.

For example, they recommended that the Army delay plans to construct a new medical center in San Antonio, Tex., while nearby the Air Force's Wilford Hall Medical Center has 300 empty hospital beds.

Currently, military medical facilities of one service are open to and used by the other services in that region—especially in Europe—but no system has been established for the sharing of medical staffs between the services.

More Junior Enlisted Housing

Vice Chief of Staff Gen. Maxwell R. Thurman has instructed the Army staff to include married lower-ranking enlisted soldiers in their plans for new military housing. Gen. Thurman's directive will affect existing housing facilities, as well as new construction and the Army's "build-to-lease" and "rental guarantee" programs.

Based on Gen. Thurman's instruction, Army housing officials in Europe are including married E1s, E2s and E3s in their "attic conversion" program and in new housing construction plans after fiscal 1986. In Europe, where a significant shortage of enlisted housing already exists, these newly eligible soldiers will increase the demand by 3,000 units or more, according to an Army spokesman.

The new housing created by the attic conversion program —whereby the Army will convert unused attics in existing military housing facilities in Europe into apartments during the next five years—was originally intended only for married E4s and E5s.

The Army has asked major domestic commands to include their junior enlisted married soldiers in fiscal 1986 build-to-lease and rental guarantee plans and to consider setting aside specific numbers of units for those soldiers.

No Drinking While On Duty

Soldiers on duty may no longer purchase and consume alcoholic drinks at Army clubs, following a pronouncement from the deputy chief of staff for personnel, Lt. Gen. Robert M. Elton.

While the selling of drinks to soldiers during duty hours by clubs is not being strictly prohibited, Gen. Elton has made it clear that the policy of the Army is to strongly discourage such activity. He noted that the policy change supports "Army readiness requirements that call for physically fit and mentally alert soldiers."

Commanders at individual posts determine when their troops are in an on-duty status and that determination need not be tied to uniform wear or normal working hours. Personnel who do drink during duty hours are subject to punishment if they are impaired. A blood-alcohol count of 0.05 qualifies a soldier as being impaired while on duty.

Gen. Elton's pronouncement made clear, however, that package stores may still sell alcoholic beverages to be consumed off duty. Additionally, clubs are not prohibited from selling drinks to off-duty soldiers, retirees or other authorized personnel during normal duty hours.

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Microcomputer System Tested For Battalion, Company Use

The Tactical Army Combat Service pport Computer System (TACCS) is w being tested by the 24th Infantry vision (Mechanized) at Ft. Stewart, ., before introduction in offices and ld units throughout the Army. TAC-, a portable microcomputer system, is ing developed initially for use by Army pply and personnel specialists. Eventu-y, the system will be used in support maintenance, finance, communications curity, ammunition management, med-l management and property account-ility.

News Call

A spokesman familiar with TACCS scribes the system as "user friendly," ting that it has been designed to be op-ated by soldiers who do not possess ta processing skills. Each computer thin the system includes a video dis-y screen, a mass storage unit, an elec-nics unit with 768 kilobytes of memo-connections for communications hook-s and a printer.

The TACCS computer can be broken wn to its components, placed in pro-tive cases and then carried by two sol-rs. In place, the TACCS may send and eive information through radio signals, phone wires or direct wire-to-wire con-tions with other Army computers. The ormation may also be stored on flop-disks and transferred to other com-ters.

Final testing of the personnel admin-ation application of TACCS is sched-d to be completed early this month lowing an extensive six-week evaluation the system before fielding throughout Army. The SIDPERS-2.5 (Standard tallation/Division Personnel System) eing run on TACCS to simplify main-ance and research of personnel data. SIDPERS-2.5 is designed to automate a entry, enable its users to generate orts more rapidly and go to the field ring training or in the event of mobili-ion. This TACCS-assisted system is ected to go to military personnel of-s and units down to the battalion and arate company level after completion the field tests.

Supply personnel from the 24th Divi-n began using TACCS last spring with arrival of the first 11 TACCS com-ters at Ft. Stewart in March. Soldiers m the 24th's Division Support Com-mand have begun using the computers to implement the Standard Army Retail Supply System (SARSS) software program to speed up the supply requisition process.

When a spare part is needed, the parts load list clerk at the direct-support unit can rapidly determine if the item is available by entering the order data on the TACCS. If it is in stock, the clerk can quickly draw up a release order on the computer. When items are out of stock, the computer records the order and it is transferred on a floppy disk to the division materiel management office, where another TACCS computer sends the request to a decentralized automated service support system (DAS^3), the division-level computer system.

This system "eliminates unnecessary warehousing and double handling," according to one official, because "parts often are released to customers directly from the loading dock without having to be stored anywhere." Filled parts orders arrive at the warehouse loading dock of the direct-support unit and are quickly received because the orders have already been stored on disks within the TACCS system.

Additional software programs are being designed to "speed the flow of information processing through different levels of command" and "link the TACCS computers with company and battalion-level personal computers," noted one official responsible for TACCS. The personal computers, known as unit-level computers (ULCs), are scheduled to be fielded in fiscal 1986. Prototype ULCs are currently being tested by 24th Division motor pools for ordering vehicle parts.

The Burroughs B-20 computer family of the System Development Corporation provide the computers for the TACCS system. Some B-22 versions have been sent out to the field, along with the later B-26 version, which will eventually replace all of the B-22s. Some 150 TACCS systems are now in the field, at such locations as Ft. Stewart, Ga.; Ft. Lee, Va.; Ft. Huachuca, Ariz.; Ft. Sam Houston, Tex.; Ft. Belvoir, Va.; Redstone Arsenal, Ala.; Aberdeen Proving Ground, Md.; West Germany; and Panama.

Another 79 TACCS computers are scheduled to go to the 7th Infantry Division at Ft. Ord, Calif., during the next two months, and 450 are to be sent to various Army units by the end of this year. Officials estimate that close to 9,000 of the computers will be fielded through 1988.



Pvt. Sheila Johnson, of the 724th Maintenance Battalion, 24th Infantry Division (Mechanized), logs in receipt of parts shipments on a new Tactical Army Combat Service Support Computer System (TACCS) terminal at Ft. Stewart, Ga.

Specialist Four Update. Army Chief of Staff Gen. John A. Wickham Jr. has asked the Army staff to submit its report on the issue of eliminating the specialist four grade and making all E4s corporals. Gen. Wickham is also requesting the Army staff to address the question of whether corporals are to be considered noncommissioned officers (NCOs).

Several months ago, the chief of staff approved elimination of the specialist five and specialist six grades effective 1 October. Last spring, Gen. William R. Richardson, commander of the Army's Training and Doctrine Command (TRADOC), recommended eliminating the specialist four grade as well, in a position statement prepared for the deputy chief of staff for personnel, although he admitted such a move would take time to implement. Gen. Richardson also noted, however, that TRADOC's position was that the NCO corps begins at the rank of sergeant, not corporal.

Gen. Wickham is expected to approve continued use of the specialist four grade for the foreseeable future while providing soldiers greater opportunity to convert to "hard stripe" corporal, according to a personnel spokesman at the Pentagon.

Major Command Redesignated. The Army's Ballistic Missile Defense Organization has been renamed the U.S. Army Strategic Defense Command. Lt. Gen. John F. Wall, former director of civil works at the Army's Office of the Chief of Engineers, commands the renamed organization.

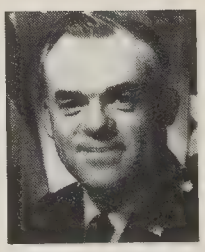
The primary mission of the comman is to support the Defense Department strategic defense initiative (SDI) progran According to a spokesman for the con mand, "Work is under way on techno ogies such as sensors—both optical ar radar—computers for command, contr and battle management, nonnuclear i terceptors which can destroy offensiv ballistic missiles . . . and directed energ weapons such as lasers and neutral part cle beams which could engage ballist missiles."

The Strategic Defense Command co tinues as a field operating agency of Hea quarters, Department of the Army. Th three-star command has its headquarte in Arlington, Va., with additional el ments in Huntsville, Ala., and Kwajalei the Marshall Islands.

GENERAL OFFICER CHANGES



Lt. Gen. S.T. Weinstein from CG, USAICS, to ACSI, OCS.



Maj. Gen. J.M. Bunyard from CG, MISCOM, to ADCSRDA, OCS.



Maj. Gen. Henry Doctor Jr. from CG, 2nd Inf. Div., to DIG(IATIM), OIG.



Maj. Gen. H.J. Hatch from ACE, OCE, to D–CW, OCE.



Maj. Gen. Fred Hissong Jr. from DED–CA, AMC, to CG, AAM&CC.



Maj. Gen. D.R. Infante from PM, PATRIOT, to CG, USAADAC, FBT.



Maj. Gen. A.L. Lilley Jr. from CG, USATCFE, to SA–CG, AMC.



Maj. Gen. J.E. Long from DCG, AAFES, to CG, AAFES.



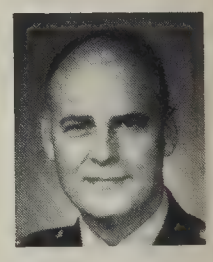
Maj. Gen. H.R. Overholt from AJAG to JAG.



Maj. Gen. W.K. Suter from CG, USALSA, to AJAG.



Maj. Gen. E.L. Trobaugh from CG, 82nd Abn. Div., to DCG, Fifth USA.



Maj. Gen. R.D. Wiegand from CG, JFK SWC, to C–OMC, Cairo.

Brigadier Generals: **G.M. Baxter** from ADC, 24th Inf. Div. (Mech), to CUSDR–Pakistan; **R.K. Bean** from CS, 3rd Inf. Div. (Mech), to ADC, 9th Inf. Div. (Mtzd); **G. P. Bowen** from DCG–P&R, AAM&CC, to DED–CA, AMC; **C.M. Brintnall** from DAA–Brazil, to ADD–A&O, DIA; **R.E. Brooks** from DComdt, USASSI, FBHI, to D–EPM, MILPERCEN; **R. J. Dacey** from CG, USAED, SW, to ACE, OCE; **D.E. Eckelbarger** from CG, VII Corps Art., USAREUR, to D–HRD, ODCSPER; **J.L. Ecoppi** from DD–USACAA, to CS, Fourth USA; **C.E. Edgar III** from DD–CW, OCE, to CG, USAED, SA; **H.C. Eggleston** from CS, 1st Inf. Div. (Mech), to CG, VII Corps Art., USAREUR; **F.E. Elam** from D–Mgmt., OCS, to CG, USATCFE; **W.J. Fiorentino** from D–ASISG, FLK, to USAPM, ADS; **J.A. Guest** from Cdr, 5th SFG (Abn), to CG, JFK SWC; **J.B. Hilmes** from CG, USAED, NC, to CG, USAED, SW; **S.H. Hyman** from DIS, OACSI, to CG, USAIA; **T.G. Lightner** from CG, 2nd ROTC Reg., FKK, to DCG, WESTCOM; **James Piner Jr.** from ACS, G4, UNC/USFK/CFCK, to USDCS, LIVE OAK, MB; **W.H. Reno** from ADC, 9th Inf. Div., to DCSRM, TRADOC; **Girard Seitter III** from D–HCO, OSG, to CG, BAMC; **M.F. Spigelmire** from ADCSOPS (POM), FORSCOM, to ADC, 24th Inf. Div. (Mech); **H.G. Taylor** from Cdr, 2nd Bde., 24th Inf. Div. (Mech), to ADC, 3rd Inf. Div.

■ ***USAICS**—U.S. Army Intelligence Center and School; **ACSI**—Assistant Chief of Staff for Intelligence; **ADCSRDA**—Assistant Deputy Chief of Staff for Research, Development and Acquisition; **DIG(IATIM), OIG**—Deputy Inspector General for Investigations, Assistance, Training and Information Management, Office of the Inspector General; **ACE, OCE**—Assistant Chief of Engineers, Office of the Chief of Engineers; **D–CW**—Director of Civil Works; **DED–CA**—Deputy Executive Director for Conventional Ammunition; **AAM&CC**—Army Armament, Munitions and Chemical Command; **PM**—Project Manager; **USAADAC, FBT**—U.S. Army Air Defense Artillery Center, Ft. Bliss, Tex.; **USATCFE**—U.S. Army Transportation Center and Ft. Eustis; **SA–CG**—Special Assistant to the Commanding General; **USALSA**—U.S. Army Legal Services Agency; **JFK SWC**—John F. Kennedy Special Warfare Center; **C–OMC**—Chief, Office of Military Cooperation; **CUSDR**—Chief U.S. Defense Representative; **DCG–P&R**—Deputy Commanding General, Procurement and Readiness; **DAA**—Defense and Army Attaché; **ADD–A&O**—Assistant Deputy Director, Attachés and Operations; **USASSI, FBHI**—U.S. Army Soldier Support Institute, Ft. Benjamin Harrison, Ind.; **D–EPM**—Director of Enlisted Personnel Management; **USAED, SW**—U.S. Army Engineer Division, Southwestern; **D–HRD**—Director of Human Resources Development; **DD–USACAA**—Deputy Director, U.S. Army Concepts Analysis Agency; **SA**—South Atlantic; **D–ASISG, FLK**—Director, Army Space Initiative Study Group, Ft. Leavenworth, Kan.; **USAPM, ADS**—U.S. Army Project Manager, Air Defense Systems; **SFG**—Special Forces Group; **NC**—North Central; **DIS, OACSI**—Director for Intelligence Systems, Office of the Assistant Chief of Staff for Intelligence; **USAIA**—U.S. Army Intelligence Agency; **FKK**—Ft. Knox, Ky.; **UNC/USFK/CFCK**—United Nations Command/U.S. Forces Korea/Combined Forces Command Korea; **USDCS**—U.S. Deputy Chief of Staff; **MB**—Mons, Belgium; **D–HCO**—Director of Health Care Operations; **BAMC**—Brooke Army Medical Center; **POM**—Plans, Operations and Mobilization.*

rganizational Effectiveness Cuts. The rmy is eliminating 487 organizational fectiveness (OE) positions—347 officer ›ts and 140 civilian—following an inpendent assessment of the OE program the Army leadership. "There was a ong feeling on the part of the Army ıdership that the OE program needed be altered," said a spokesman familiar th the issue. He noted that while the ogram has been considered quite sucssful, the Army does not wish to main-n the number of OE officers presently ing carried.

In a related move, the Army is closing Organizational Effectiveness School d Center at Ft. Ord, Calif. Officers th the personnel management specialty ay, in some cases, be asked to provide expertise as an additional skill, the ficial indicated.

The decision to eliminate the OE posi-ns was also made in light of the need r more manpower spaces to fill the Ar-y's new light infantry divisions while aintaining current force levels.

ew Warrant Officer Plan. Several ajor proposals on warrant officer ca-er management have been approved by rmy Chief of Staff Gen. John A. Wick-m Jr. The proposals were developed by e Total Warrant Officer Study group WOS), which was chartered by Gen. ickham last fall.

Among the changes proposed by the WOS are:

- Establishment of a new senior war-nt officer pay grade, CW5, with the nk of "master warrant officer."
- Establishment of a career progres-n pattern whereby warrant officers vance through three distinct stages or ill groups.
- Requiring reserve warrant officers integrate into the regular Army upon omotion to CW3.
- Management of warrant officer ca-ers based on years of warrant service her than total active federal service.
- Establishment of a selective career ention program to determine whether warrant officer will serve beyond 20 ars in warrant status.

These changes will require congression-approval and are, therefore, not ex-cted to be implemented for at least o years. Certain proposals, such as the e requiring Reserve CW3s to integrate o the regular Army, will have "grand-her" clauses so that those already in d-career will not have to fulfill the re-irements.

Establishment of the CW5 grade is close-tied to the development of the three-red career progression system. The CW5 ade would form the third or top skill oup, composed of warrant officers with tween 20 and 30 years of experience and the appropriate level of training to qualify them as "master warrant officers." At the middle level would be "senior warrant officers" in the grades of CW3 and CW4, with between 10 and 20 years of warrant experience. At the initial level would be the W1s and CW2s with less than 10 years of experience.

The purpose of this career progression plan is to develop the warrant officer through training and assignments that are appropriate to his level of ability and experience. The system also is designed to ensure that warrant officer positions are categorized according to one of the three skill levels. In the past, any warrant officer W1 through CW4 could fill a position as long as he had the proper specialty qualifications. Under the new system, each warrant officer position will be coded so that it must be filled by a warrant officer from one of the three skill levels.

The CW5 proposal must be reviewed by the Department of Defense and consultations made with the other services which issue warrants (Navy, Marine Corps, Coast Guard) before it goes to Congress for approval, noted a spokesman for the study group. He indicated that there is a demonstrated need for this senior grade among about six percent of the warrant officer corps and the TWOS had documented where the positions are required.

The regular Army integration program for reserve warrant officers will resemble the provisions of the Defense Officer Personnel Management Act (DOPMA), which require reserve officers selected for promotion to major to be automatically integrated into the regular Army. Those warrant officers unwilling to accept a regular Army appointment upon promotion to CW3 will be required to leave active duty.

The provision establishing management of warrant officer careers by years of warrant service is intended to simplify and standardize the timing of military education and specific assignments. When an enlisted soldier receives a warrant, he will be starting anew in terms of time in that type of duty and he may serve up to 30 more years, until the mandatory retirement age of 62.

Army Astronaut Named. The National Aeronautics and Space Administration (NASA) has selected Capt. Charles D. Gemar for the astronaut candidate program. Capt. Gemar, an Army aviator, is the fourth officer from his service to take part in the space program. This month, he begins one year of training at the Johnson Space Center, Houston, Tex.

A 1979 graduate of the U.S. Military Academy, Capt. Gemar earned his rating as a helicopter pilot at Ft. Rucker, Ala. From 1980 to 1983, he served with the 24th Combat Aviation Battalion, 24th Infantry Division (Mechanized), Hunter Army Airfield, Ga. After commanding Wright Army Airfield, Ft. Stewart, Ga., Capt. Gemar returned to Hunter Army Airfield as chief of the operations branch, Command Aviation Office. Before going to Houston, he completed the aviation branch advanced course and the rotary wing aviator refresher training course.

Better Ammunition Logistics. The Army Armament, Munitions and Chemical Command's project manager for ammunition logistics is developing new ways to package ammunition to speed up transport, delivery and use of the materiel in the field.

Located at the Army's Armament Research and Development Center (ARDC), Dover, N.J., the project manager is working in conjunction with the packaging section of ARDC's Large Caliber Weapon Systems Laboratory on a munitions packaging improvement program which has already borne fruit.

In the past, 105-mm tank ammunition has been packaged in fiber tubes and wooden boxes, which are cumbersome, difficult to get at and leave behind a pile of debris equal in weight to the ammunition. Through the use of improved ma-

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terials, processes and design concepts, the project manager has developed an easily accessible, single container that can be set in units for pallet loads.

The result has been a marked reduction in the time it takes munitions handlers to rearm the Army's main battle tanks. The improved packaging program is using this technology to design a container for 120-mm ammunition to be used with the M1A2 Abrams tank.

In addition to reducing rearming time, the program is attempting to produce containers that cost and weigh less, can be cleansed of chemical agents and can carry more rounds of ammunition per pallet. With commonality of packaging among the services and U.S. allies as a goal, the project manager for ammunition logistics is working closely with Navy, Marine Corps, Air Force and West German packaging groups.

Sixteen contracts with industry have been let thus far, including packaging programs related to artillery, armor, infantry, aviation and air defense artillery systems.

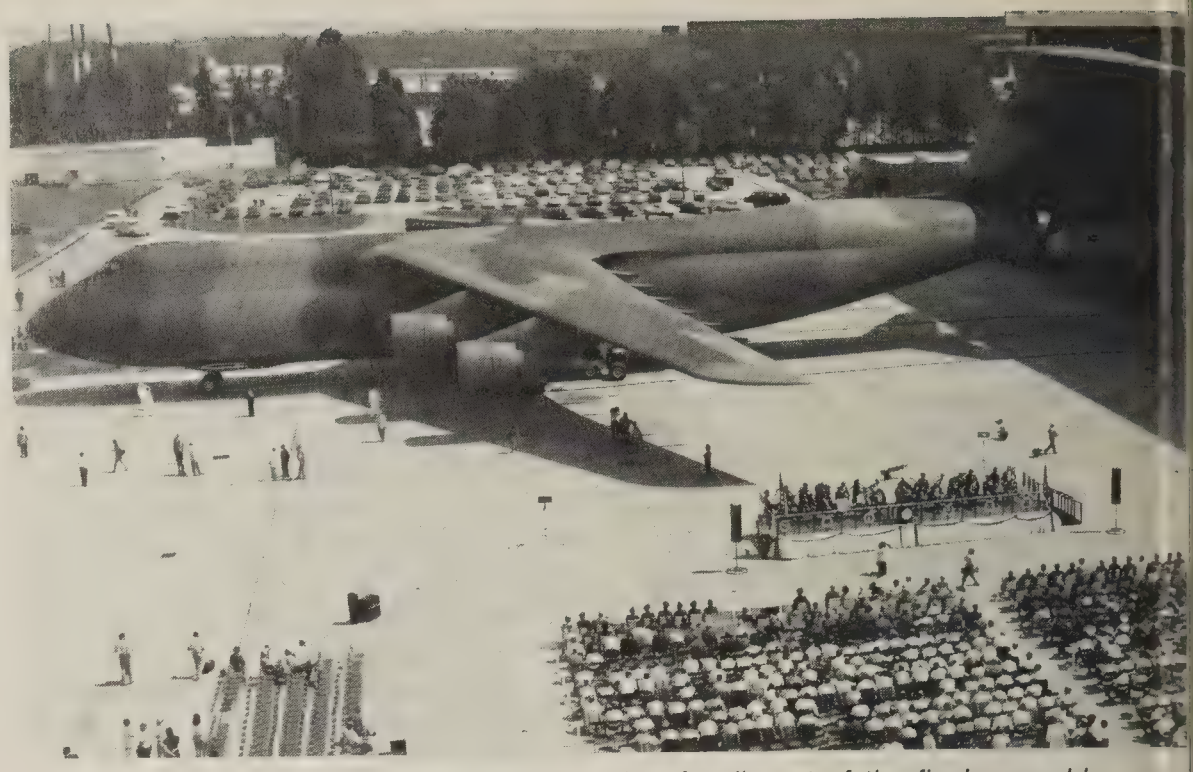
English Language Program. Beginning this month, the "English as a Second Language" program will help soldiers who are not native English speakers improve their language skills before beginning basic training. The training in English verbal and comprehensive skills is being conducted by the Defense Language Institute at Lackland Air Force Base, Tex., and will prepare about 1,200 soldiers annually, according to an official from the Education Directorate of the Army's Training and Doctrine Command.

Army enlistees from American Samoa, Guam and Puerto Rico and others whose primary spoken language is not English are being tested to determine their English language fluency. Those who do not make a passing score will be enrolled in the program for 14 to 24 weeks, depending upon their level of ability. Enlistees in the program are on active-duty status and live and work in a military environment.

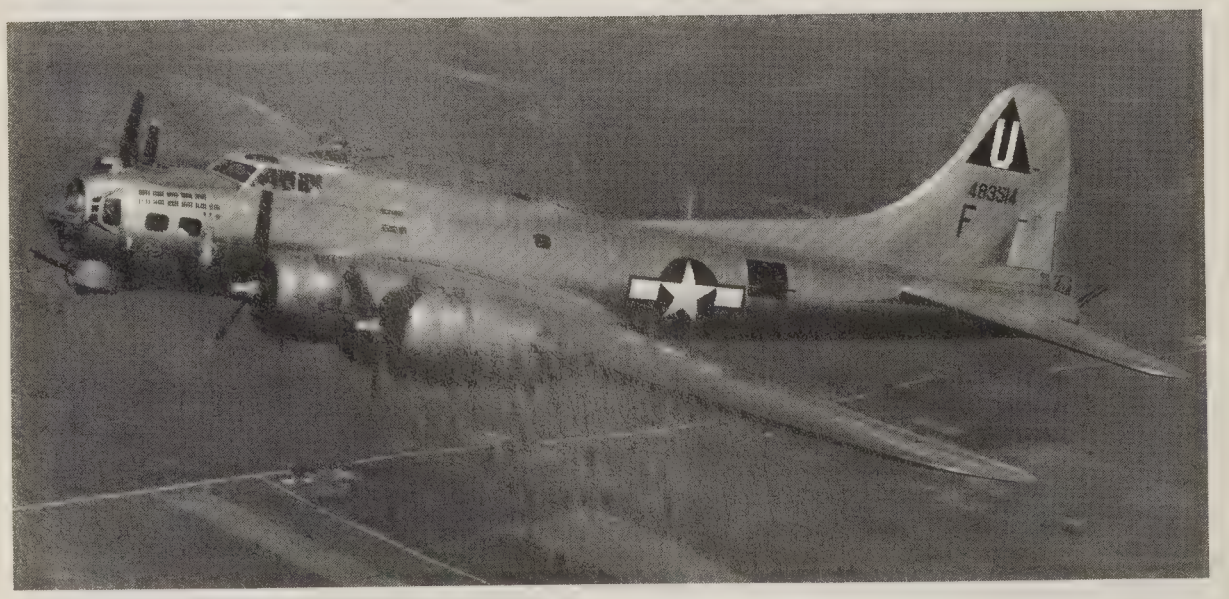
Upon completion of the program, graduates enter into a regular basic training cycle.

Retiree Recall Test. In October and November, the Army will conduct a test of its retiree recall and preassignment program. Exercise "Certain Sage" will expand upon last year's test, known as "Grey Thunder," conducted at Ft. Jackson, S.C.

The recall program was established in 1981 to help correct the shortage of trained soldiers in the event of mobilization for a national emergency. The first preassignment mobilization orders were issued to retirees that year. At present, there are 132,000 retirees assigned to 56 mobilization stations under the program.



The first of 50 C–5B Air Force transport aircraft rolls out of the final assembly area at Lockheed-Georgia Company facilities in Marietta, Ga. The C–5B fleet, which will go into service over the next few years, is vital to an expanded airlift capacity that will permit faster deployment of Army units and equipment.



'Sentimental Journey,' a refurbished B–17G bomber, flew to Seattle, Wash., for the 50th anniversary celebration of the B–17's first flight. This aircraft, which flew 55 missions with the U.S. 8th Air Force during World War II, was acquired by the Confederate Air Force in 1977 and restored to its wartime appearance.

Past exercises have shown that the r called retirees can perform mobilizatio duties with a minimum of post-mobiliz tion training. Four hundred volunteer r tirees at eight locations will take part i this call's test. The locations and dat are as follows: Ft. Sheridan, Ill., 7–9 O tober; Ft. Sill, Okla., 9–11 October; F Bliss, Tex., 15–17 October; Ft. Kno Ky., 23–25 October; Heidelberg, We Germany, 5–7 November; Ft. Bragg, N.C 13–15 November; Fitzsimons Army Me ical Center, Denver, Colo., 16–18 N vember; and Ft. Myer, Va., 19–21 N vember. In addition, retirees will he staff military entrance processing statio in El Paso, Tex., Louisville, Ky., Denve Chicago, Ill., and Milwaukee, Wisc.

Survivor's Lapel Pin. The Army h authorized a lapel button for the next kin of soldiers who died while on acti duty, although not in a combat zone. addition to the new lapel pin, the Arm has a Gold Star lapel button for the ne of kin of soldiers who have died in combat zone, a lapel button for soldie who have been honorably discharg and a separate lapel button for retire

The lapel button was approved f wear by the other services in 1973 a the Army version is being made retroa tive, so that survivors of soldiers w died on duty during or after 1973 are e gible to wear it. Anyone who is eligib and would like the pin may write t Commander, U.S. Army Reserve Co ponents Personnel and Administrati Center, ATTN: DARC-PSE-AW, 97 Page Blvd., St. Louis, Mo. 63132-52 The request should note the name of t deceased soldier and the survivor's re tionship to the soldier.

Scholarly Treatment of a Complex Topic'

The Nuclear Arms Debate and the Superpowers

clear Arms Control: Background and ssues. *Committee on International Se- urity and Arms Control, National Academy of Sciences. National Acade- ny Press, 2101 Constitution Ave., N.W., Washington, D.C. 20418. 378 pages; ppendixes; $16.50.*

By Col. James B. Motley
U.S. Army, retired

Books

here is no more important challenge in the world than how to prevent unprecedented catastrophe of nuclear r. Despite almost universal agreement averting such a disaster, however, damental differences exist between United States and the Soviet Union



l between various groups within the ited States on how to best accomplish s goal.

This book focuses on the broad range general issues underlying the current lear arms debate. They are: the desir- lity of arms control as a process; the ic objectives of arms control; the ap- aches to arms control agreements; the us of the U.S.–Soviet strategic rela- nship; the interaction of other nuclear es with the U.S.–Soviet strategic rela- nship; the requirements for verifica- n; the record of compliance with exist- agreements; "linkage" of arms con- to other political military objectives; approach to the negotiating process; l domestic acceptance of arms control eements.

These issues, in addition to background l issues relating to each of the princi- current arms control agreements and posals directed at nuclear arms con- , are discussed (from the viewpoint of various protagonists in the debate) in ontechnical, nonpartisan fashion. This roach is used for the purpose of al- ing readers to "arrive at their own clusions on the matter of such critical portance to the United States and the rld at large."

Although this book does not reach clusions or make recommendations specific arms control proposals or is- s, it is quite explicit on at least three nts:

- The dangerous confrontation between United States and the Soviet Union es from the deep political differences t divide the two countries and gener- ate mutual distrust. In the absence of real progress in resolving their political differences, the superpowers have sought to prevent nuclear war principally by developing more and more improved nuclear weapon systems.
- Arms control defines the effort to "manage" the nuclear confrontation by mutual agreement in ways designed to lessen the likelihood of nuclear war. The arms control process seeks to constrain the size of nuclear arms and their delivery systems to stabilize the strategic relationship.
- The major asymmetries in the strategic nuclear forces, as well as other military forces of the two countries, reflect many of the underlying differences between the two superpowers. These differences include such factors as attitudes acquired over centuries of radically different historical experience, military doctrine, political ideology, the economic base, relations with allies and potential adversaries.

Nuclear Arms Control is a scholarly treatment of a complex topic. It is a timely and comprehensive book recommended both for the specialist and general reader. The book will prove to be a valuable reference source for the growing number of people who are concerned with this vital issue of national security.

The absence of chapter endnotes and a selective bibliography detracts somewhat from a well-written book. These two items would have been extremely helpful for those interested in pursuing further reading on arms control.

COL. JAMES B. MOTLEY. U.S. Army, retired, Ph.D., is a member of the professional staff of the National Institute for Public Policy, Fairfax, Va.

Foiled by Decisive Midway Battle

Japan Wanted to Occupy Hawaii

Hawaii Under Japanese Rule: Japanese Plans for Conquest After Pearl Harbor. *John J. Stephan. University of Hawaii Press, 2840 Kolowalu St., Honolulu, Hawaii 96822. 228 pages; maps; notes; bibliography; index; $16.95.*

By Col. Stanley L. Falk
U.S. Army Reserve, retired

Students of World War II have long been aware of the fact that Japanese ambitions toward Hawaii did not end with the surprise attack on Pearl Harbor. Not only did Japanese aircraft attempt to bomb Pearl Harbor a second time—an abortive raid in March 1942 by two long-range seaplanes refueled by submarine—but the Japanese navy developed plans for a major operation to invade and occupy the Hawaiian islands.

While a general description of these plans was published as long ago as 1955, it is only with the appearance of John J. Stephan's startling little book that we become aware of the full details of Japanese preparations and the extent to which they almost became a reality.

Author Stephan, who teaches Japanese history at the University of Hawaii, has done extensive research in the military archives in Tokyo and Washington, D.C., and has delved deeply into the Japanese literature on Hawaii. This has enabled him not only to write a perceptive description of Japanese wartime intentions, but also to explore nearly half a century of Japanese civilian and military preoccupation with the islands and their population. His analysis of Japan's long fascination with Hawaii makes this book a significant contribution to American understanding of Japanese ambitions.

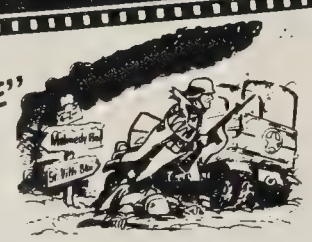
Fueled by decades of interest in Hawaii and its large Japanese population, Japan's military plans for the islands were for-

mulated by Combined Fleet Commander Adm. Isoroku Yamamoto and his aggressive staff. The day after Pearl Harbor, Adm. Yamamoto directed his staff to draw up plans for the "Eastern Operation": the invasion and occupation of the Hawaiian islands. This ambitious project, he felt sure, would destroy the U.S. capability to mount an early counteroffensive and bring about a negotiated peace and a guarantee of Japanese security in the Pacific.

Over the next five months, the admiral and his staff successfully struggled to convince first the navy general staff and then the army of the necessity and feasibility of the Eastern Operation. They planned to take Midway and part of the Aleutians in June 1942, and then destroy the American Pacific Fleet in an all-out decisive engagement. Johnson and Palmyra islands would be seized in August in preparation for a major amphibious assault on the island of Hawaii in October. The invasion of Oahu would occur in March 1943.

Along with the military planning, civilian bureaucrats and academics were also developing extensive schemes for a Japanese-occupied Hawaii. They foresaw a restructured economy and society, and a new political administration that revived the Hawaiian monarchy and reeducated Japanese-Americans for Hawaii's

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The Editors

projected role in the Greater East Asia Co-Prosperity Sphere.

These grandiose plans did not die when the course of the war made it clear that an invasion would no longer be possible. Indeed, civilian fascination with the exhilarating prospects of Hawaii continued long after the battle of Midway spelled the end of Adm. Yamamoto's ambitions.

The loss of four Japanese carriers and nearly a third of Japan's naval aviator in a few hours in early June 1942 save Hawaii from the scheduled October in vasion. If this disastrous setback had nc occurred, could the Japanese have carrie out their plans?

Professor Stephan thinks so, and h may well be right. Certainly, we nov realize exactly how decisive the Midwa battle was and, after finishing this book how fortunate the citizens of Hawaii wer to be spared Japanese occupation.

COL. STANLEY L. FALK, U.S. Arm Reserve, retired, Ph.D., was formerl deputy chief historian for Southea Asia at the U.S. Army Center for Mil tary History and is the author of fiv books on World War II.

Tyranny of Logistics Emphasized

Solid History, Dully Recounted

The Patterns of War since the Eighteenth Century. *Larry H. Addington. Indiana University Press, Tenth and Morton Streets, Bloomington, Ind. 47405. 318 pages; maps; illustrations; selected bibliography; $29.50 cloth, $10.95 paper.*

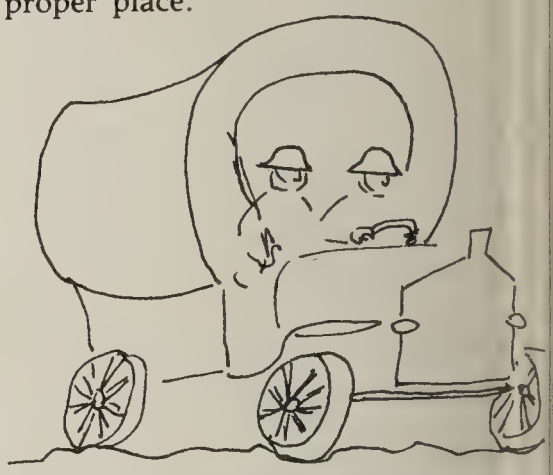
By Russell F. Weigley

This survey of the evolution of modern war emphasizes military organization, logistics, weapons and tactics and how these elements shaped the course of campaigns. It serves best as a textbook and reference volume.

Its wealth of factual detail with only limited, cautious pronouncement of judgments stamps it as a reliable introduction to the subject for the classrooms of military schools and other institutions teaching military history. Its definitions of military terms and specific information on the composition of units and formations and their tactical employment will send soldiers and historians back to it repeatedly to reinforce their memories.

The author, professor of history at The Citadel, is known to many military readers for his previous book, *The Blitzkrieg Era and the German General Staff, 1865–1941* (1971). Those who have profited from *The Blitzkrieg Era* will not be surprised to find that in his new book, Professor Addington is again especially strong in his presentation of the logistical restraints on the potentialities of armies, a central theme of his first book.

In *The Patterns of War* he particularly emphasizes the tight rein that logistics has applied to the capabilities of mass armies, certainly and especially through World War I, but, with mounting dependence on petroleum, into and beyond World War II as well. It is proverbial bu all too true that, because logistics ca seem a dull subject, military historian have tended to neglect its importanc Professor Addington gives the subject i proper place.



Yet the reader might also wish that t author had shown a bit more awarene of the perils of dullness in the writi of history. This book achieves reliabil without generating much excitement. packs so much information into a re tively short space that its efforts to revi every war of any consequence throu military, naval and eventually aerial ca paigns—all the way through the Falkla Islands war of 1982—must become m outlines of events.

Even with the bulk of the book (fr page 122 onward) devoted to World W I and after, there is not enough space develop narrative tension or interest personalities. While this design was author's deliberate choice, as was his fusal to offer controversial judgments makes for difficult reading.

One can wish for Professor Addi ton's own sake that his choice had b different. The wealth of information p sented deserves a larger readership th

ose few who seem likely to persevere; us, let this reviewer urge perseverance. There is nothing else in print that tells much so concisely about how war has en conducted since the days of Gen. orge Washington. While Professor Adgton is characteristically chary of proting tendencies into the future, the oughtful reader can draw his own protions, especially regarding the growing quency and perils of wars requiring ht and agile but nevertheless exceedgly well-armed forces to deal with adrsaries, even the most backward of om will often employ highly sophisitied weapons. For soldiers oriented tord combat, it is always useful to reve reminders like Professor Addingn's on the tyranny of logistics.

ISSELL F. WEIGLEY, Ph.D., teaches at Temple University, specializing in military history. He is working on a history of modern war.



"It's sort of a new ball game here, Simpkins, you don't zap them high and low and then split the difference anymore."

Varied Fare

The Winter War: The Russo-Finnish Conflict, 1939-40. *Eloise Engle and Lauri Paananen. Westview Press Inc., 5500 Central Ave., Boulder, Colo. 80301. 192 pages; photographs; illustrations; maps; appendixes; bibliography; index; $19.50.*

Husband-and-wife authors Lauri Paananen and Eloise Engle have joined forces to produce a definitive history of this little-known but strategically significant conflict of early World War II. Lauri Paananen served with Finland's home guard during the winter war and in the Finnish infantry and air force during the remainder of World War II. Eloise Engle is the author of a number of articles and books on military affairs.

"Extensive research coupled with personal accounts of both Finnish and Russian participants in the 105-day winter war bring this . . . conflict into clear perspective. Unwilling to bow to Russian demands for territorial concessions, the Finns were forced to defend their homeland on the battlefield. The tiny Finnish armed forces, together with a united population, withstood the Soviet onslaught . . . until their dwindling ammunition and manpower were exhausted. A million Soviets lost their lives during the bitter winter, the second coldest since 1828."

A Vietcong Memoir. *Truong Nhu Tang. Harcourt Brace Jovanovich, 1250 Sixth Ave., San Diego, Calif. 92101. 368 pages; photographs; maps; glossary; appendix; index; $17.95.*

This political testimonial by the "highest-ranking Vietcong official in exile" provides an inside view of South Vietnam's trials under puppet governments and inept terrorist regimes, the growth and increasing factionalism of the National Liberation Front which helped overthrow South Vietnam from within, and the ultimate betrayal of the South Vietnamese at the hands of their victors.

No Picnic. No. 3 Commando Brigade in the South Atlantic: 1982. *Major-General Julian Thompson. Hippocrene Books, 171 Madison Ave., New York, N.Y. 10016. 201 pages; photographs; maps; glossary; index; $24.95.*

This account of the recapture of the Falkland Islands, told by one of the fighting participants, describes the actions of the No. 3 Commando Brigade. Major-General Julian Thompson details how his brigade was plucked from a training exercise in Norway, hastily fitted up with other units and packed off to the Falkland Islands. There are graphic accounts of the now-legendary battles fought by the Royal Marines and the parachute regiments. Included are more than 80 photographs taken by CPO Peter Holdgate, virtually none of which have been published before.

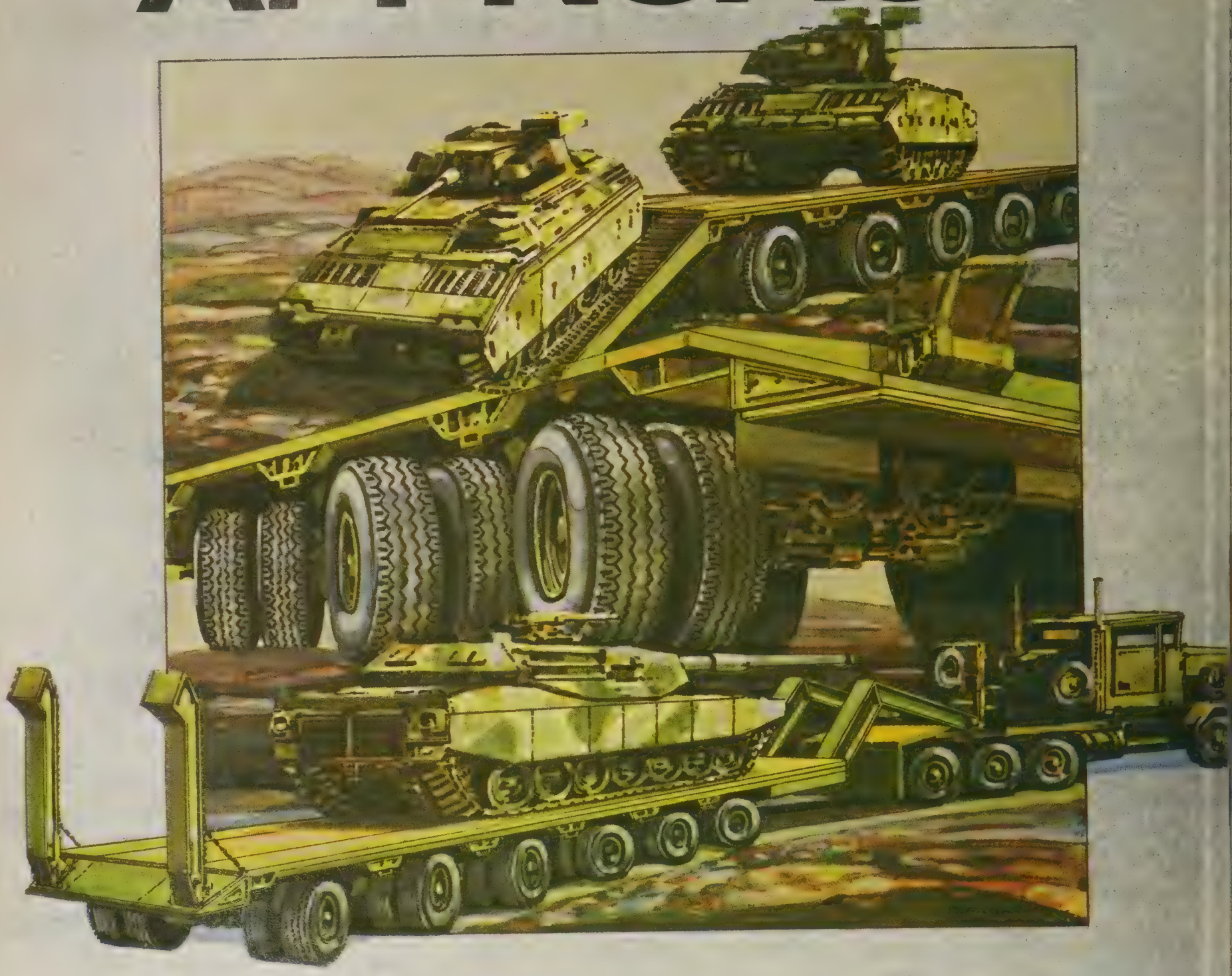
Nuclear Battlefields: Global Links in the Arms Race. *William M. Arkin and Richard W. Fieldhouse. An Institute for Policy Studies Book. Ballinger Publishing Co., a subsidiary of Harper & Row Publishers Inc., Cambridge, Mass. 02138. 328 pages; figures; tables; appendixes; sources for appendixes; bibliography; index; $14.95.*

Through their work at the Institute for Policy Studies, Director of Nuclear Weapons Research William Arkin and Research Associate Richard Fieldhouse examine the entire nuclear infrastructure. Included are complete data on the nuclear research and operations facilities of the United States, as well as those of the Soviet Union, France, China and the United Kingdom. The authors analyze the military mind to give a better understanding of how technologies directly and indirectly support the nuclear infrastructure—from weaponry to intelligence-gathering and decision-making networks.

Japan's Secret War. *Robert K. Wilcox. William Morrow & Co., Inc., 105 Madison Ave., New York, N.Y. 10016. 236 pages; bibliography; index; $15.95.*

A highly speculative and not too convincing account of Japan's World War II efforts to build and use an atomic bomb, this slim volume adds little to what we already know on the subject.

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AUSA in Action

ctober Meeting Will Feature peakers and More Exhibits

ore than 20,000 AUSA members and ts attended the Association's Annual ing last year, and this year AUSA offi- expect attendance to increase signif- ly.

e meeting's chairman, Lt. Gen. John R. man III, USA, Ret., said one reason for nnual increases is the consistently im- ed quality and quantity of military and strial exhibits at the meeting, held at the aton Washington Hotel, Washington,

his year," Gen. Thurman said, "we will over 130 industry and more than 100 ry exhibits, which will occupy 130,000 re feet of exhibit space both inside the 's exhibit halls and outside in a special it area."

n Barrier Corporation will display a va- of physical barrier systems, and Ford space and Communications Corporation show their improved Chaparral air-de- missile.

here are many advantages in having a total military and industrial exhibit program such as this," noted Gen. Thurman. "With outdoor and indoor exhibits, both industry and the military have a unique opportunity to see the latest equipment and discover new ideas and developments coming from industry," he said.

"There is no doubt how much benefit is derived by having these new technological developments in one place at the same time," Gen. Thurman added. "The Army leadership and those in the Department of Defense involved in requirements, concepts and doctrine, as well as development, can come to our meeting and see this technology firsthand. Other professionals can stay abreast of what's happening."

Admission to exhibit areas, program sessions and social functions at the 1985 Annual Meeting will be open to AUSA members and civilian employees of the U.S. armed forces, designated representatives of exhibitor and member companies, invited guests of the Association and those identified as having an interest in the Army. Spouses and other family members of attendees are also welcome at appropriate functions.

Exhibit areas will be open from 10:00 A.M. to 5:00 P.M. on Monday and Tuesday (14–15 October), 10:00 A.M. to 4 P.M. Wednesday (16 October), and from 6:00 P.M. to 8:00 P.M. that evening for Marshall Reception ticket holders only.

Gen. Thurman also noted that Monday, 14 October, is a federal holiday, Columbus Day, which will provide an excellent opportunity for those residing in the greater Washington, D.C., area to take themselves and their families to the Sheraton Washington Hotel for a "Family Day with AUSA."

Spouses and children will have a chance to see the impressive opening session and to examine the military and industry exhibits.

"This year's meeting," Gen. Thurman said, "will be easily accessible for people living in the Washington area and those out-of-town members staying at a hotel other than the Sheraton Washington because of the Metro subway. The Woodley Park–Zoo station on the Metro Red Line is no more than 50 yards from the entrance to the hotel."

"On Monday, attendees may park in the Pentagon south parking area, take the Metro Blue Line to Metro Center, transfer to the Red Line and disembark at the Woodley Park–Zoo station," he said.



acoma–Ft. Lewis–Olympia Chapter. *Cadet Team Leader Paul E. Lindstrom* (left), *niversity of Utah, accepts an AUSA certificate of achievement from then-chapter pres- 'ent Thomas H. Swarner for his team's first-place performance during the 'Ranger hallenge 85' competition, which was held at Ft. Lewis, Wash.*

Fifth Region Holds Annual Conference

The 1985 Fifth AUSA Region Meeting, hosted by the Association's Twin Cities Chapter, was held at the Marriott Hotel in Bloomington, Minn. Chapter president Raymond H. Lunde opened the meeting and Sandra Bunker, Minnesota state vice president, chaired the conference and welcomed the attendees.

Stuart A. Lindman, the civilian aide to the secretary of the Army for Minnesota, chaired the educational session, introducing Maj. Gen. Thomas P. McHugh of Fourth U.S. Army, Maj. Gen. Ralph W. Coan Jr., USAR, commander of the 103rd Corps Support Command, and Brig. Gen. Roger W. Sandler, USAR, who commands the 88th Army Reserve Command.

Industries that participated with exhibits included Control Data Corp., FMC Corp.'s Northern Ordnance Division, Honeywell Inc., Lull Engineering Co., Onan Corp., Sperry Defense Systems and Wang Laboratories Inc. The U.S. Army Recruiting Command was also represented with a booth.

The master of ceremonies for the corporate session was Lt. Gen. Marvin D. Fuller, USA, Ret., president of AUSA's Fifth Region. CSM Charles W. Atkins told those gathered how to host defense seminars for chapter corporate members. A luncheon was then held at the Ft. Snelling Officers' Club, at which Lt. Col. Matt Urban, a Medal of Honor recipient, was the principal speaker. Following the luncheon and the business ses-

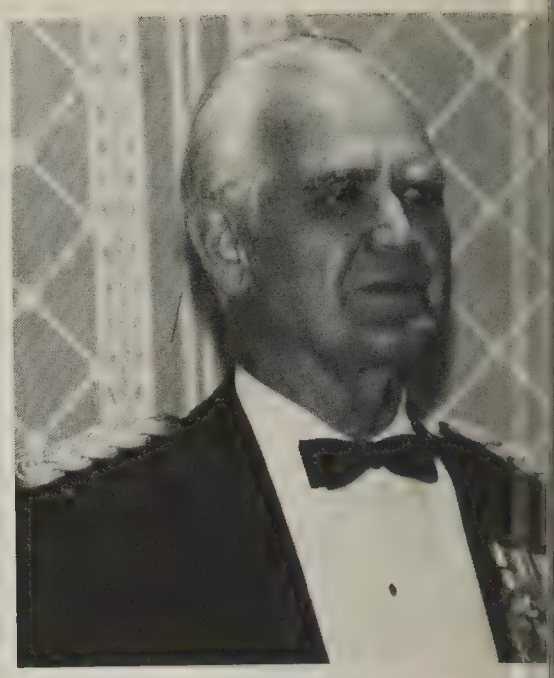
sion, attendees toured historic old Ft. Snelling.

CSM Alfred M. Kaczmarek, USA, Ret., deputy director of AUSA's regional activities, participated in the weekend conference, as well as Chap. (Maj. Gen.) Patrick J. Hessian, chief of chaplains, who gave the invocation.

The evening dinner on the final night of the conference was highlighted by a talk given by Gen. William C. Westmoreland, USA, Ret. Gen. Westmoreland and Col. Urban were introduced by Maj. Gen. Norbert J. Hennen, AUS, Ret., who had served with them during World War II in the 60th Infantry Regiment, 9th Infantry Division. Veterans of the unit from ten states were on hand for the luncheon and dinner.



Fifth AUSA Region Meeting. *Stuart A. Lindman* (right), *civilian aide to the secretary of the Army for Minnesota, congratulates Lt. Col. Matt Urban, Medal of Honor recipient, after Col. Urban gave a luncheon speech to the region meeting delegates. Lt. Col. Raymond H. Lunde* (center), *president of the Twin Cities Chapter, looks on.*



Fifth AUSA Region Meeting. *Gen. William C. Westmoreland, USA, Ret., was guest speaker at the region's banquet, and gave a talk entitled 'Vietnam—A 20 Year Perspective.'*

Discusses Ways to Improve Acquisition Process

AMC Official Addresses Virginia Chapter

The Army Materiel Command's (AMC's) deputy for management and analysis, Marie B. Acton, was guest of honor and keynote speaker at a corporate luncheon sponsored by the Fairfax–Lee Chapter.

She addressed some 200 soldiers, civilians and corporate members and discussed AMC initiatives aimed at improving the military materiel acquisition process. "We are emphasizing accelerated, or 'fast-track' acquisition programs . . . to get what our troops need . . . when it's needed," she said.

According to Marie Acton, the present acquisition process takes anywhere from six to nine years. "We are confident we can reduce it to four years," she said. The way to reach the four-year goal is by "using common sense and sound military judgment [and] aiming at requirements that call for only the essentials," she noted.

She commented that military equipment and weapons are only as good as the soldiers who operate and maintain them. "We need to capitalize on technologies that help make equipment easier to operate and maintain," she said.

Following her remarks, Marie Acton received a certificate of commendation from Fairfax–Lee Chapter president Tom Surdyk in recognition of her achievements and contributions to the Army during the past 15 years.



Fairfax–Lee Chapter. *Marie B. Acton, the Army Materiel Command's deputy for management and analysis, Tom Surdyk, the chapter president, and Maj. Gen. Richard S. Kem, commanding general, U.S. Army Engineer Center and Ft. Belvoir, discuss AUSA's corporate member program at a chapter luncheon.*

Two Awards Give For Chapter Worl

County Judge John Garth, outgoing pr dent of AUSA's Central Texas–Ft. Hood Ch ter, presented two prestigious awards a Pete Gilbert was elected the chapter's n president at a chapter barbeque held at Hood's Prichard Stadium.

The Roy J. Smith Award, given to the porate member who best supports the lo chapter, was presented to Howard Wats district manager of Texas Power and L

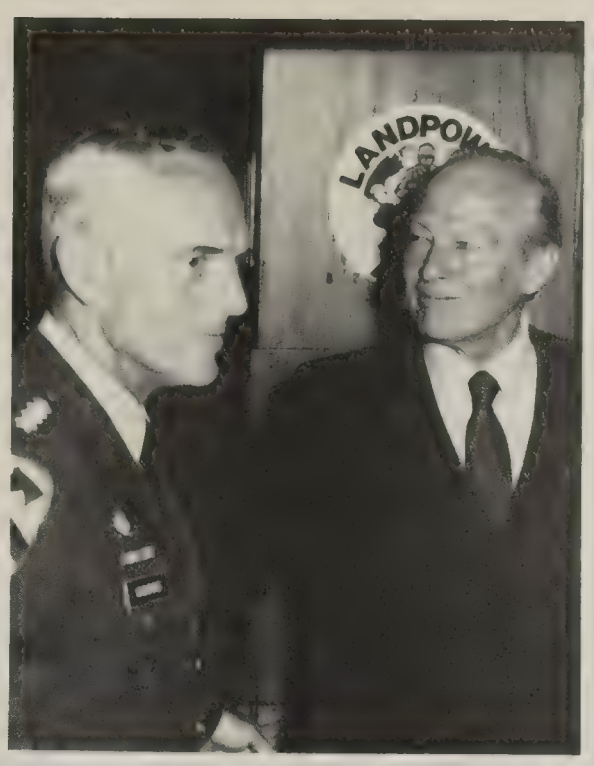


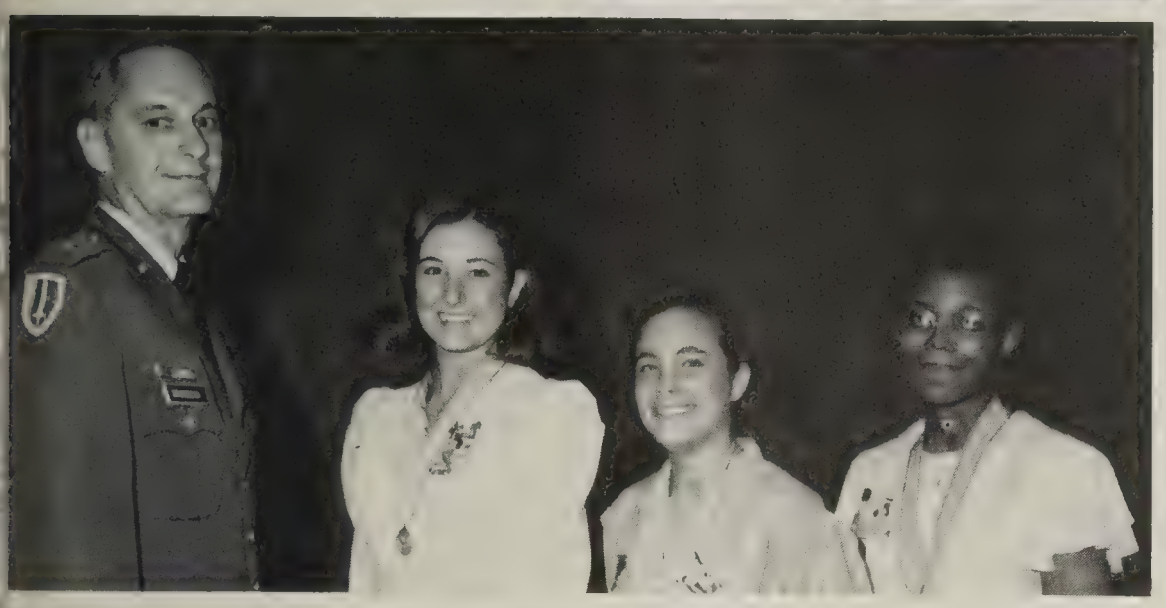
Central Texas–Ft. Hood Chapter. *County Judge John Garth* (left), *outgoin chapter president, and Pete Gilber the newly elected president, look ove a list of new chapter officers at an AU SA barbeque held at Ft. Hood.*

"We at Texas Power and Light want to
ve free enterprise works for everyone,"
! Mr. Watson after accepting the award.
he Brig. Gen. James I. King Award, pre-
ted annually to AUSA's top individual
porter, was presented to Dan Green, own-
f Centroplex Ford in Killeen, Tex., for his
ations of vans and other modes of trans-
ation which AUSA uses to send troops
ie Association's Annual Meeting in Wash-
on, D.C.

udge Garth also greeted Lt. Gen. Crosbie
Saint, Ft. Hood's commanding general,
welcomed him for membership in the lo-
AUSA chapter. AUSA's new officers for
1985–1986 year, nominated and approved
the general membership, include: Pete
ert, president; Gus Lydahl, Billy Mills,
n Blankenship and Howard Watson, vice
sidents; Bill Clark, treasurer; and Suzette
pman, secretary.

CHRISTINE MANNING





Shreveport, La. *Brig. Gen. John S. Drosdeck Jr.* (left), *from the U.S. Army Missile Command, poses with award winners of the 36th International Science and Engineering Fair after presenting their awards. The winners are,* from left, *Leslie Thomas, Beth Meyer and Latisha Keith; each was awarded a $100 check from the Association.*

★ STAR CHAPTERS ★

Chapters that reach their aggregate membership targets are classified as Star Chapters and will retain that status until they fail to reach any subsequent membership goal. The following chapters have achieved Star Chapter status. Chapters annotated with an asterisk have attained their semiannual goal based upon the 31 December, 1985, membership targets and the end-July, 1985, membership statistics. Those chapters without an asterisk achieved their Star Status based upon the 30 June, 1985, membership goals.

AFCENT Community (Brunssum, The Netherlands)
Alaska (Anchorage)
Ark–O–Tex (Texarkana, Tex.)
Bavarian Alpine (Munich, Ger.)
Bogardus S. Cairns (Ft. Rucker, Ala.)
Braxton Bragg (Ft. Bragg, N.C.)
Capital District of New York (Albany)
Chattahoochee Valley–Ft. Benning (Columbus, Ga.)
Coastal Empire (Ft. Stewart, Ga.)
Dix (Ft. Dix, N.J.)
Dwight D. Eisenhower (Palm Springs, Calif.)
Ft. Armstrong (Rock Island, Ill.)
Ft. Monmouth (N.J.)
Gen. Creighton W. Abrams (Frankfurt, Ger.)
Gen. Joseph W. Stilwell (Ft. Ord, Calif.)
Greater Augusta–Ft. Gordon (Ga.)
Greater Gulf Coast (Mobile, Ala.)
Hawaii (Honolulu)
Korea (Seoul)
MG Henry G. Sharpe (Lathrop, Calif.)
Marne–Franconia (Würzburg, Ger.)
Mid-Palatinate (Kaiserslautern, Ger.)
Middle Forge (Dover, N.J.)
* Mother Lode (Sacramento, Calif.)
* Northern New York–Ft. Drum (Watertown, N.Y.)
* Old Ironsides (Ansbach, Ger.)
Polar Bear (Fairbanks, Alaska)
Puerto Rico (Ft. Buchanan)
Redstone–Huntsville (Ala.)
San Diego (Calif.)
Southern Arizona (Ft. Huachuca)
* Southern New Mexico (Las Cruces)
Southwest Oklahoma (Ft. Sill)
* Southwestern Michigan (Battle Creek)
Spearhead (Frankfurt, Ger.)
* Stuttgart (Ger.)
Tennessee–Kentucky (Ft. Campbell, Ky.)
Yorktown (Zweibrücken, Ger.)

Carlisle Barracks, Pa. *Army Chief of Staff Gen. John A. Wickham Jr.* (left), *is welcomed to AUSA's 'Joint Operations in Support of the AirLand Battle' symposium by Lt. Gen. Harry W. O. Kinnard, USA, Ret.* (right). *Gen. Wickham was a speaker at the conference.*

Handpicked Group Attends Briefings

A unique and diversified group of 18 professional businessmen and educators from the AUSA Greater Los Angeles Chapter area were handpicked by the chapter's Operation Outreach Committee to visit the Pentagon for Army leadership briefings and tours. The committee's goal is to reach out to people who touch many others around them through their social and business lives, expose them to the Army at the highest level possible and arm them with knowledge to respond to issues involving the Army and national defense.

This idea was conceived at a Greater Los Angeles Chapter board meeting and met with unanimous approval. The Operation Outreach Committee was then formed, and plans were made for the first Army National Security Seminar for Los Angeles participants. The first seminar group flew to Washington, D.C., with Army escorts Lt. Col. Bill Knapp and Carolyn Trotter of the Los Angeles Army Public Affairs Office.

Upon their arrival, the Greater Los Angeles Chapter hosted a reception and dinner for the group. Army representatives and AUSA national headquarters guests included: Lt. Gen. John R. Thurman III, USA, Ret., AUSA's director for industry affairs; Gen. Frederick J. Kroesen, USA, Ret., an AUSA senior associate; Maj. Gen. Kenneth E. Dohleman, USA, Ret., on AUSA's advisory board of directors; Col. Ralph E. Ropp, USA, Ret., AUSA's director of regional activities; Maj. Gen. John L. Ballantyne III, commander, Military District of Washington; and Maj. Gen. Charles D. Bussey, the Army chief of public affairs.

The following morning, the group was presented an "Army Overview" briefing by the Army vice chief of staff, Gen. Maxwell R. Thurman. The morning also included briefings by Brig. Gen. James W. Shufelt, the deputy assistant chief of staff for intelligence; Brig. Gen. Leslie E. Beavers, director of per-

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ASSOCIATION OF THE U.S. ARMY

AIMS AND OBJECTIVES

THE ASSOCIATION OF THE U.S. ARMY shall be an organization wherein all who are in accord with its objectives may join in the exchanging of ideas and information on military matters, and in fostering, supporting and advocating the legitimate and proper role of the Army of the United States and all of its branches and components in providing for and assuring the nation's military security.

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sonnel, plans and systems, Office of th Deputy Chief of Staff for Personnel; Bri Gen. Larry D. Budge, deputy director for op erations, readiness and mobilization, Offic of the Deputy Chief of Staff for Operation and Plans; and Maj. Gen. Stephen R. Wood Jr., director of program analysis and evalua tion. Question and answer sessions followe each briefing.

A luncheon was hosted by Lt. Gen. Arthu E. Brown Jr., director of the Army staff, wh gave a short address to the group afterwar and a special tour of the Army Operation Center. Seminar participants concluded the trip by observing a changing of the guar ceremony at the Tomb of the Unknowns ar visiting President John F. Kennedy's grav at Arlington National Cemetery.

Chapter Notes

Maj. Gen. Henry G. Sharpe Chapter. Ca fornia's adjutant general, Maj. Gen. Willa A. Shank, discussed the improved readines of the California National Guard while a dressing a chapter dinner meeting held the Sharpe Army Depot.

Greater Los Angeles Chapter. "Emerge cy Army Requirements" was the theme the chapter's annual industry-governme seminar held at the Los Angeles Marri Hotel, where military speakers discussed A my requirements for the next decade.

New York–Col. Joseph Markle Chapte Maj. Rodolphe L. Coigney, president of th Association of the Free French in the Unit States, spoke about operation "Overlor from the perspective of a member of the fr French resistance. Sgt. Lee Carrus, nam soldier of the year from the 24th Intelligen Battalion, 77th Army Reserve Commar was honored at the chapter meeting.

San Jacinto Chapter. Lt. Gen. Richard Lawrence, president of the National Defen University, was the principal speaker at chapter luncheon. He spoke about mobiliz tion to meet the needs of global warfare

Maj. Gen. William F. Dean Chapter. "C Changing Army" was the subject of a t given by Maj. Gen. Robert S. Holmes, co mander of the 91st Division (Training), a chapter dinner meeting.

Gallant Pelham Chapter. Maj. Gen. Willi A. Hornsby, adjutant general of the Alaba Army National Guard, addressed memb of the chapter at a quarterly luncheon me ing. Other meeting business included presentation of certificates to Soldier of Quarter Sp.4 Jerry Craig, Noncommissio Officer of the Quarter Sgt. Jon Freeman a Drill Sergeant of the Quarter S.Sgt. Jam Barnes.

Tacoma–Ft. Lewis–Olympia Chapter. F rest Westering, athletic director at Pac Lutheran University, gave a presentation titled "The Strangest Secret in the Worl The Key to Leadership," while speaking a chapter breakfast meeting. Honored at meeting were Noncommissioned Officer the Year S.Sgt. Daniel R. Fix and Soldie the Year Sp.4 Joseph A. Gall III.

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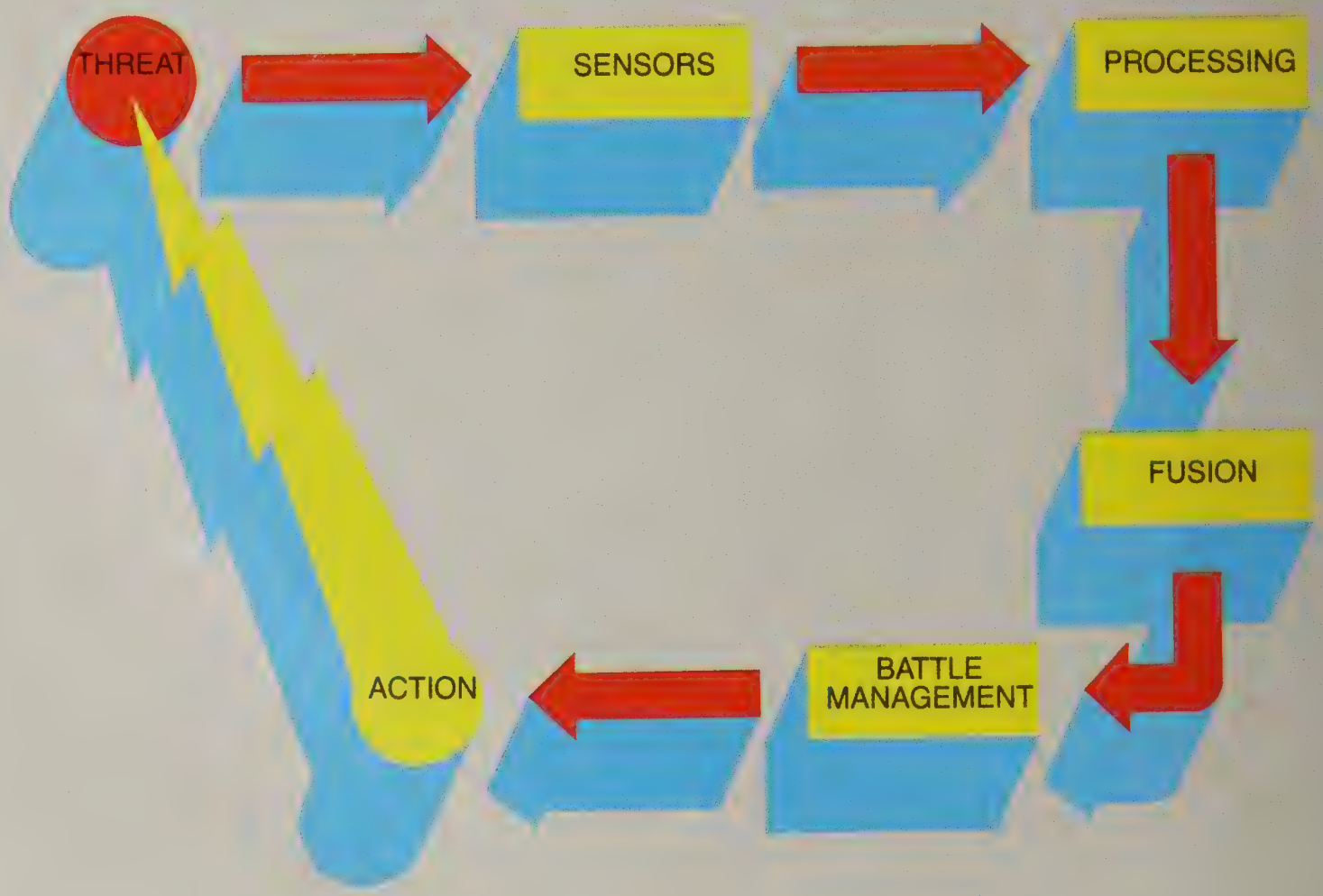
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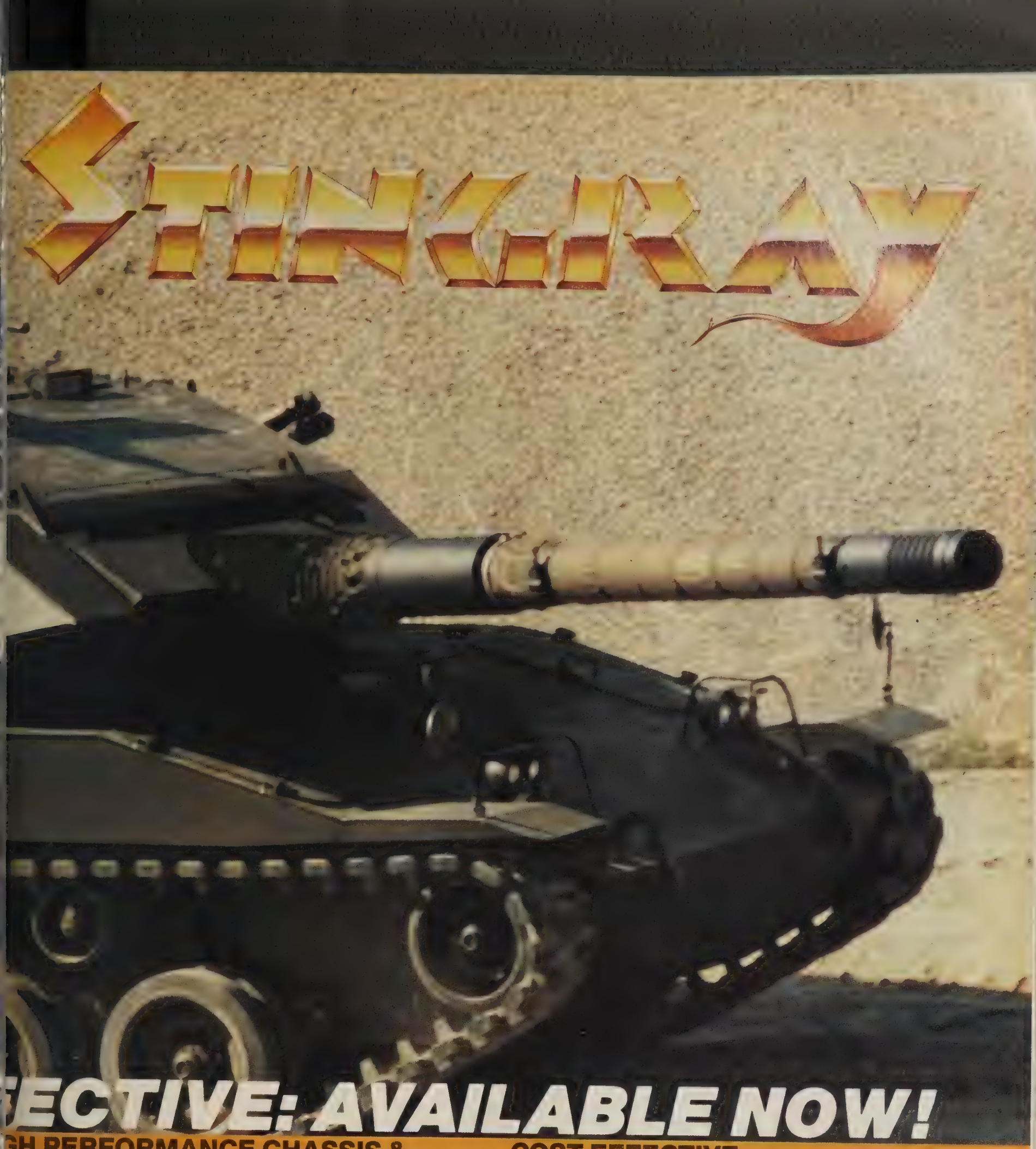
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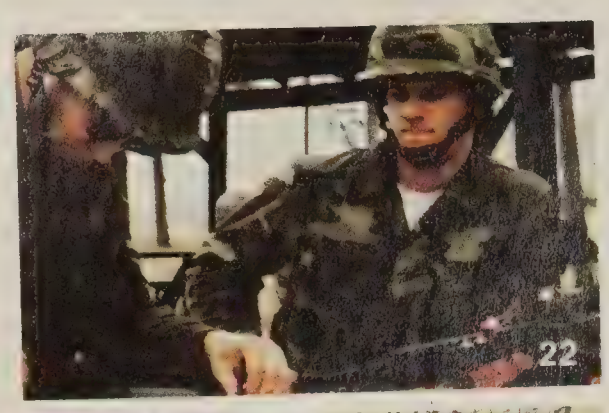
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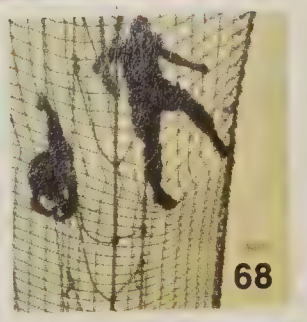
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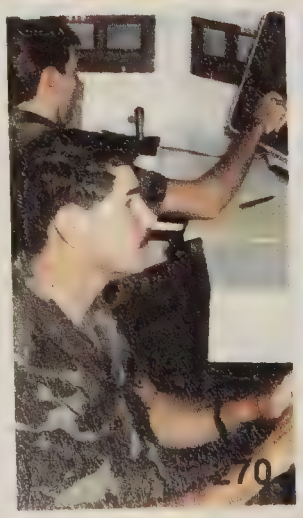














ARMY

The Magazine of Landpower

VOL. 35, NO. 10 Published by the Association of the U.S. Army OCTOBER 198

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The Army Story in the Year of Leadership

For 11 months of the year, ARMY magazine adheres faithfully to the well-founded principle that what an article is about is more important than whose by-line appears at the top. A name can carry great weight, of course, when an authority on the subject is involved or a noted public figure is the author; but, by and large, prospective contributors are not given a section of the magazine and invited to write what they like.

The exception is that 12th issue—this one—in which the secretary of the Army and much of its senior leadership are asked to tell in their own words about the accomplishments, problems and plans in their areas of responsibility. The editors' continuing trust that the allotted space will be put to good use has not been misplaced, for in the *Green Book* the reader can get as complete a picture of where the U.S. Army stands, command by command, as exists between covers anywhere. That this annual compilation is widely regarded as a valuable reference work, inside and outside of the Army, is a tribute to the attention paid by contributors over the years to making sure that information provided is accurate, timely and broad in range.

The focus of this year's cover reflects the strong emphasis given by *Green Book* contributors to the 1985 Army theme, "Year of Leadership." "Leaders are made, not born," writes Gen. John A. Wickham Jr., Army chief of staff. "We are committed to creating and sustaining a leadership climate where fighting skills, innovation, competence, character development and caring are rewarded." It is a charge that is enunciated often and in many different ways in this issue.

There are 21 major status reports this year, the most we have ever carried, in addition to the Command and Staff section, a directory of Army posts and installations, maps showing the locations of Army posts around the world and the weapons directory—the Army's own report on its hardware. Picking up another phase of the unit histories that ARMY has been carrying over the past several years, in this issue the subject is separate combined arms brigades and armored cavalry regiments, complete with patches.

Despite the best efforts of the contributors and editors to keep the information throughout as current as possible, it takes over six months to compile, write, clear, edit, lay out and publish a *Green Book*. While it is possible to make some corrections that reflect changing events within a few weeks of press time, there inevitably are instances in which focuses or figures have changed, however subtly, by the time the *Green Book* is in readers' hands. Whenever possible, as in the case of command changes, we try to anticipate shifts and incorporate them into the issue.

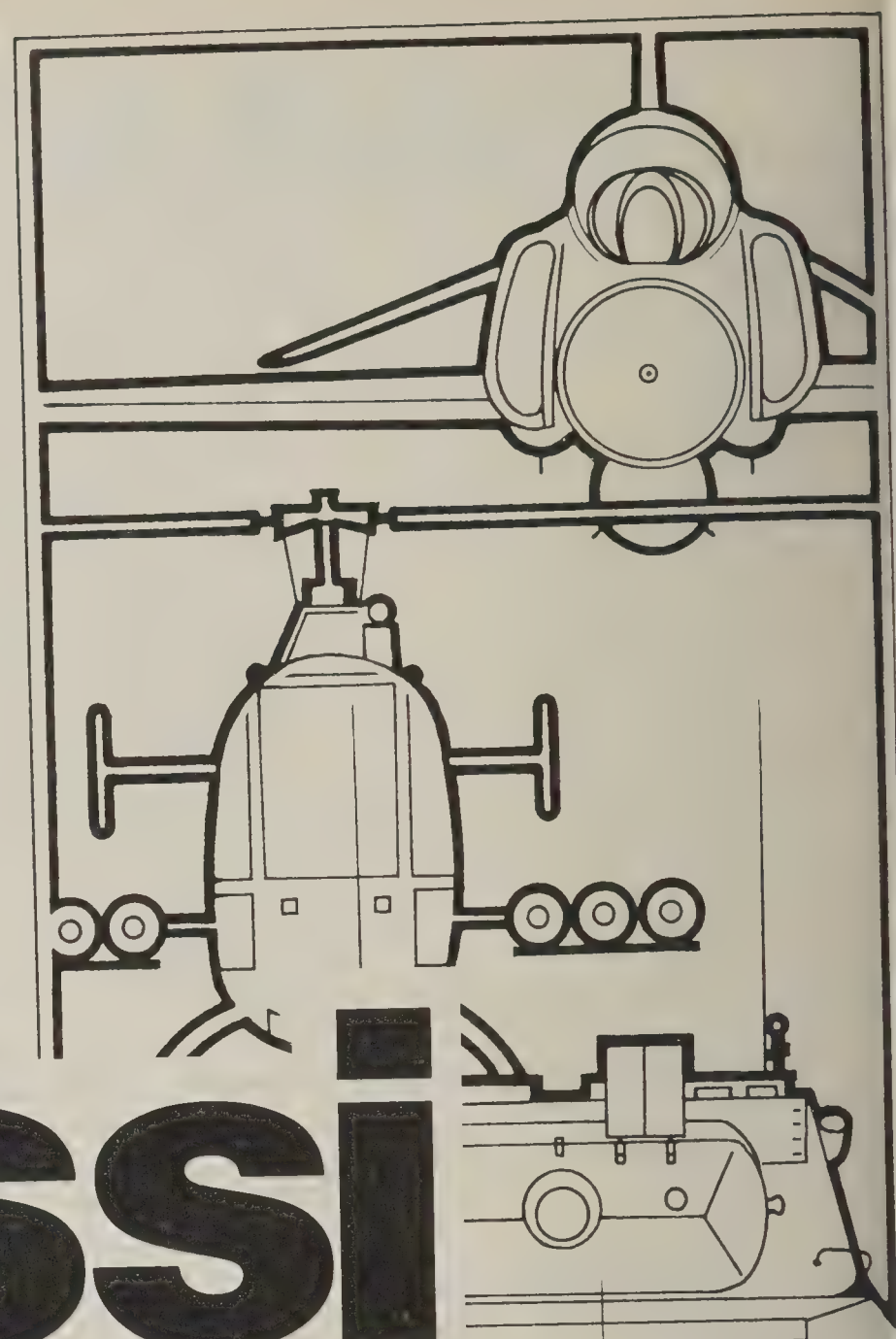
Compiling this annual status report on landpower would not be possible without the cooperation and enthusiasm of a great many people: commanders, staff personnel at all levels, civilians, writers, photographers—the list of positions, ranks and military occupations represented is very long. This *Green Book* would be larger by several pages if it were possible to identify them all. If such an undertaking were possible, however, at the top of our roll of those deserving special gratitude would be:

Maj. Gen. Charles D. Bussey, Army chief of public affairs, whose wisdom and personal support from inception to the final deadline were crucial to getting the *Green Book* out on time and without some singularly glaring gaps; Lt. Col. Jeffrey E. Furbank and Maj. Blanche E. Mazur, staff officers in the community relations division, Office of the Chief of Public Affairs (OCPA); William J. Donohoe, chief, Office of Security Review, OCPA; Col. Dennis J. O'Malley, chief of public affairs, and his deputy, John M. Gorgas, Headquarters, Army Materiel Command; John B. Wilson and the organizational history branch, historical services division, Army Center of Military History; and Dr. Opal V. Landrum, chief of the support operations division, Army Institute of Heraldry, and Adele T. Richey, who heads the division's plans, program and budget branch.

THE EDITORS□

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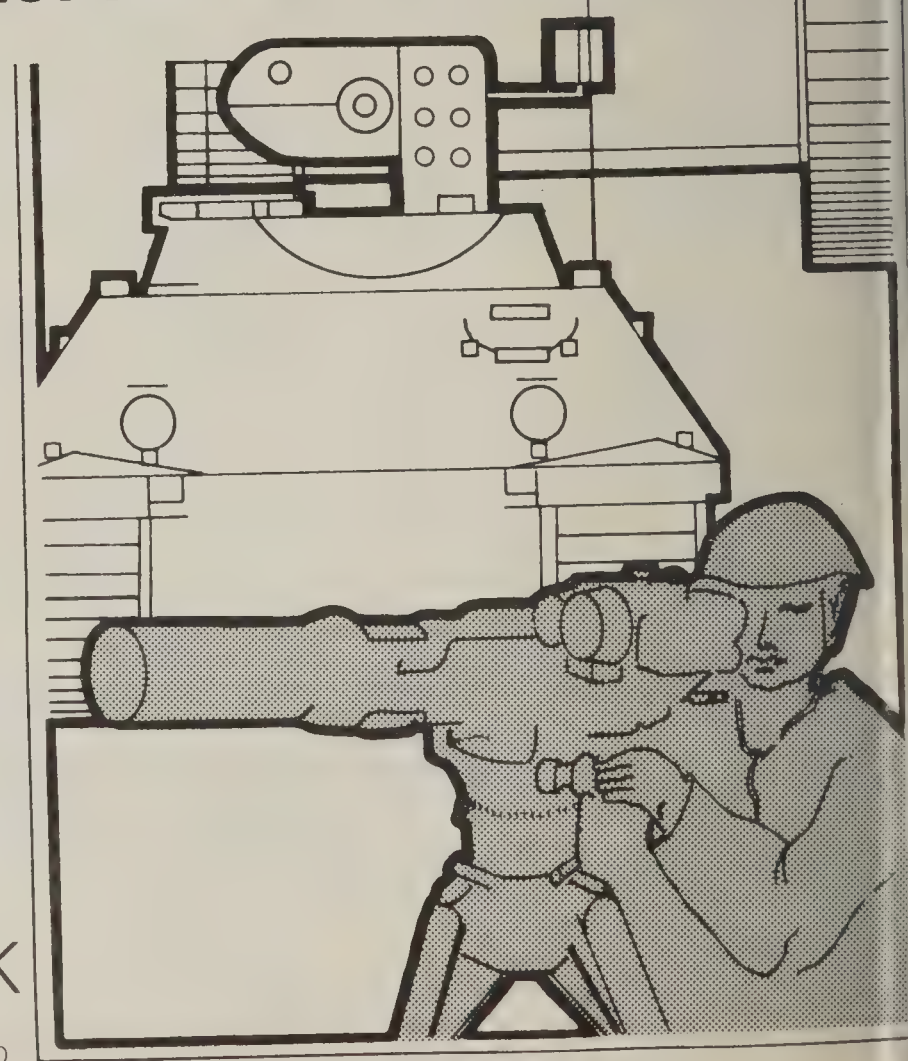


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Status Reports

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Spirit of Leadership Deeply Ingrained in American Heritage

In a world that grows ever smaller and more dangerous, the Army seeks leaders who can handle any problem in the peacetime arena, from proving ground to boardroom, while nurturing the seeds of greatness—men who can step forward from obscurity, as they have in the past, to inspired wartime command.



By John O. Marsh Jr.
Secretary of the Army

The signing of the Constitution by delegates to the Constitutional Convention in Philadelphia, 17 September, 1787.

The Preamble to the Constitution of the United States of America reads as follows:

> We the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquility, provide for the common defence, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States of America.

All of us in the Army—military and civilian, active and reserve, officer and enlisted—swear to "support and defend the Constitution of the United States against all enemies, foreign and domestic" and that we will "bear true faith and allegiance to the same."

I call your attention to the Constitution because, in September 1987, the United States commemorates the bicentennial of the signing of the Constitution and because many of its signers represent the spirit of military leadership which is the declared Army theme for 1985.

American Army veterans of the American Revolution were involved in that first Constitutional Convention.

For example, 22 of the 39 delegates who signed the Constitution were veterans of the Revolutionary War. The secretary who attested that document was the 23rd veteran. A total of 12 of them had served in the regular Army, and 11 had served in the militia.

Their experiences in that conflict made them deeply conscious of the need for a strong central government that would prevail against its enemies, yet one that would safeguard the individual liberties and republican form of government for which they had fought.

Because of their efforts—the result of which we now enshrine in the Constitution—the president of the United States is the commander in chief of the military forces.

It is Congress, however, that has the power to raise and support those forces and to declare war. The Founding Fathers established for all time the precedent that the military, subordinated to Congress, would remain the servant of the republic.

That concept is the underpinning of the American soldier, and it is important that we remember this relationship. It is Congress that is the source of our manpower and funding: it, therefore, plays a role in our national defense.

The military signers of the Cons tion were patriots and leaders in e sense of the words. They not only fo in the revolution, they preserved the tory by drafting the Constitution forging the new government.

All went on to careers of distingui public service. Eleven would become n bers of the U.S. Senate; seven, mem of the House of Representatives (or speaker); eight, governors; three, ju two, cabinet officers; and one, pres of the United States. These men c tively represent the essence of the le ship needed in the Army and countr day as we continue to chart our na path.

Just as our forebears lived in a da ous time, such is our situation t These perilous times require the



lership we knew then. The internaal environment is turbulent. Soviet itary forces continue to build, as does r ability to project their power by l, sea and air.

)ther trouble spots in Southwest Asia, ica and Southeast Asia are worrisome, concerns about our own hemisphere e grown. The trend toward world terism continues to rise, as we recently ıessed with the execution of Petty Offr Robert D. Stethem in Lebanon.

hose who do not learn from history doomed to relive it. Recall that, in 9, the Soviet Union entered into a aggression pact with the Nazis to parn Poland. In that same year, they ıded Finland. In 1940, they seized Lat- Lithuania and Estonia. In 1948, they kaded Berlin. In 1950, they supported North Korean invasion of South Ko- In 1953, they put down the popular ising in East Germany. In 1956, they ally crushed the Hungarian revolution. ı 1968, they occupied Czechoslovakia and suppressed the freedom being manifested there. In 1979, they invaded Afghanistan. In 1983, they shot down a Korean airliner with 269 men, women and children aboard. In 1985, they murdered Lt. Col. Arthur D. Nicholson Jr. in East Germany while he was performing a duty he had a right to perform, in a place he had a right to be under an international agreement.

I ask you to remember the words of Abraham Lincoln and apply them to our situation today. At a time of crisis in our nation's history, President Lincoln said:

> The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise with the occasion. As our case is new, so we must think anew and act anew. We must disenthrall ourselves, and then we shall save our country.

Today, the United States is more than 50 percent dependent on foreign sources for 23 of 40 critical materials essential to its economy and national security. Many of the sources for these materials are near

General of the Army Dwight D. Eisenhower.





Col. Theodore Roosevelt at the head of his 1st U.S. Volunteer Cavalry—the 'Rough Riders'; despite the impression left by this idealized painting, virtually all of the regiment's combat during the Spanish-American War in Cuba took place dismounted, including the legendary charge up Kettle Hill in the battle of San Juan, 1 July, 1898.

Confederate Gen. Robert E. Lee (right foreground) *signs the instrument surrendering the Army of Northern Virginia to Lt. Gen. Ulysses S. Grant* (left), *in the parlor of the McLean house, Appomattox Court House, Va., 9 April, 1865.*



Gen. George Washington reviews troops during the 1777–78 winter encampment at Valley Forge, Pa.



the trouble spots of the world, and passage to and from our trading partners is frequently through choke points, both in our own hemisphere and around the world. For example, nearly one-half of all U.S. foreign trade transits the Panama Canal and the Caribbean Sea.

The poet John Donne observed that "no man is an island, entire of itself." In a similar fashion, we are citizens of an interdependent world, inexorably linked to faraway places. Freedom to cross the oceans of the world and fly the airways that link continents is vital.

To assure that this will always be the case, members of the Total Army must perceive their role in terms of the national security objectives to preserve the peace, to deter war, and should deterrence fail, to win the war. To this end, I share with you the six Army planni goals as stated in the fiscal 1985–89 D partment of Defense (DoD) planning gui ance:

- To defeat the Warsaw Pact and ma tain the territorial integrity of NATO
- To deny the Soviets the oil resour in the Persian Gulf.
- To defend U.S. interests in the P cific.
- To defend our allies in Asia, Afr and Latin America.
- To establish a strategic reserve the protection of the Western Hemisphe
- To respond to other threats to U interests elsewhere in the world.

The accomplishment of these six pl ning goals is a tall order that requ superb leadership at all levels. This cludes not only leadership on the bat field but in the boardroom as well.

Through this year's Army "lead ship" theme, Gen. John A. W ham Jr. and I hope to strengt leadership in our Army in an endu sense. We want to lay the groundw for the most sweeping and intensive c sideration of the principles and appl tions of leadership and its qualities has ever been undertaken by any a in the world. To do so is to renew historic roots and reinforce the spiri military leadership.

Our history is fraught with exam of Americans who have emerged f obscurity in time of crisis to lead u



JOHN O. MARSH JR., secretary of the Army since February 1981, is a former four-term congressman from Virginia's 7th District (1963–71), who has also held a series of high-level executive branch appointments, including the cabinet-level post of counselor to the President during the Gerald Ford Administration (1974–77). A 1951 graduate of Washington & Lee University law school, Mr. Marsh retired from the Virginia National Guard as a lieutenant colonel in 1976, after 32 years of active, Reserve and Guard service that began with his enlistment in the Army in September 1944. Commissioned from OCS at the age of 19 in 1945, Mr. Marsh served with the Army of Occupation in Germany until 1947. Returning to civilian life, Mr. Marsh joined the Army Reserve while still in law school but changed to his hometown Guard unit when he began his law practice in Strasburg, Va., in 1951. Mr. Marsh became a judge in Strasburg and was town attorney for New Market, Va., before being elected to Congress in 1962. He remained active in the Guard, completing parachute training in 1964 and the jumpmaster course in 1969. After retiring from Congress, he returned briefly to the practice of law, and then was appointed assistant secretary of defense for legislative affairs. In 1974, he became national security advisor on the staff of Vice President Ford, with whom he had worked closely in Congress, and moved to the White House when Mr. Ford became President later that year. While at the White House, he chaired the top-level Presidential Intelligence Coordinating Group, which reorganized the U.S. intelligence community in the mid-1970s. During 1966–70, he was a member of the American Revolution Bicentennial Commission, which was created by legislation he introduced, and later headed the President's Bicentennial Commission. Mr. Marsh has lectured at many Army schools, including the Infantry School and the National Defense University.





neral of the Armies John J. Pershing

Maj. Gen. Andrew Jackson rallies troops at the battle of New Orleans, 1815.



y and who have gone on to serve ation very well. We can learn from much about the art and science of ship.

ere was the leadership of George ington, who as commander in chief Army helped win victory on Rev- nary War battlefields through the ing force of his character. A hero at Forge throughout the harsh winter 77–78, Gen. Washington was also knowledged hero of Yorktown and on to become the first president of nited States.

m him, we have learned to strength- ir national will and to renew our of purpose. When it seemed the itutional Convention would collapse disarray because of regional, economic and philosophical differences, it was George Washington who charged the delegates with these words:

> Let us raise a standard to which the wise and the honest can repair. The event is in the hands of God.

Other examples from the Revolutionary War include Maj. Gen. Nathanael Greene, the hero of Cowpens and a master of mobility and finesse (Alexander Hamilton eulogized him "as a universal and pervading genius"), and Brig. Gen. Francis Marion, the partisan leader from South Carolina who played a substantive role in thwarting Britain's "southern strategy" and whose greatest talent was in grasping the meaning of guerrilla warfare.

The War of 1812 tested the mettle of our young Army. Among its more important battles were those on the Raisin River and at Chippewa and New Orleans, where Maj. Gen. Andrew Jackson, known to his soldiers as "Old Hickory," decisively defeated the British. From Gen. Jackson, who became our seventh president, we learned the value of an iron resolution to succeed, no matter what the odds.

During the Mexican War, Maj. Gen. Zachary Taylor and his soldiers defeated Santa Anna and his forces at Buena Vista. Gen. Taylor served in this war as a role model and teacher for two young officers under his command who were destined to greatness—Ulysses S. Grant and Robert E. Lee.

In 1861, Confederate forces fired on Ft. Sumter, and the Civil War began. The fighting was hard at places like Bull Run, Vicksburg and Gettysburg. Both sides produced heroes. Besides the great leaders Lt. Gen. Grant and Gen. Lee, there were Confederate Col. John S. Mosby in the field of special operations, Bvt. Maj. Gen. Joshua L. Chamberlain, who won the Medal of Honor at Gettysburg, Maj. Gen. J. E. B. Stuart in the Confederate cavalry, and Confederate Lt. Gen. Thomas J. ("Stonewall") Jackson, an artillery officer who revolutionized light infantry tactics.

Gen. Grant, whose military genius has never been fully appreciated, was the officer who first perceived how to mobilize the resources of an industrial society to wage a total war; he became our nation's 18th president.

During the short Spanish–American War in 1898, Col. Theodore Roosevelt and his "Rough Riders" fought bravely at San Juan Hill. Col. Roosevelt, who held the view that a militarily unprepared nation invited attack, was to receive the Nobel Peace Prize and become the 26th president of the United States.

In this century, we have General of the Armies John J. Pershing, General of the Army George C. Marshall, General of the Army Douglas MacArthur and a host of others who were little known until world war thrust them into positions of awesome responsibility—leaders such as Generals of the Army Dwight D. Eisen-

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World War II showed us that Amer-
warriors are there when we need
. Who in 1940 had ever heard of
ge Patton, Mark Clark, Omar Brad-
Dwight Eisenhower, George Marshall
Matthew Ridgway?
ople ask, "Where are the warriors
y?" They are here right now. We
them in Grenada. They are at Ft.
d, Tex. They are in Panama, West
many, Japan and South Korea. Yes,
are there, but we do not need a war
ove it.
ving said that, I would like to point
he Achilles' heel of our defense con-
ts. A lot of questions are being raised
ie media and Congress. I am talking
t cost overruns, weapons systems
n, performance, management and
g. These are essentially management
ions, raised in peacetime, and they
require men and women of excep-
l leadership ability to resolve them
fficiently and effectively executing
programs and policies.
happen to believe that developing
leaders who possess the spirit of
ry requires the rigorous application
e principles of leadership that have
tested and proven in the dust and
sion of battles gone by. The case
approach to teaching leadership is
part of the equation. Another part is
patient tutoring and mentoring of
rdinates by leaders at all levels.

his year's Army leadership theme
represents the latest in a series fo-
cusing on those critical elements
define the spirit of the Army as an
ution. In 1981, the Army designated
first theme "Yorktown—the spirit
ctory." We did that to focus atten-
on the Army's historic roots of great-
ratified with soldiers' blood at York-
, the last great battle of the Amer-
Revolution.
1982, "physical fitness," with the
n, "fit to win," linked the impor-
of physical fitness to the Army's
bilities. It was a time to stress the
for all soldiers—front-line troops
eadquarters staff alike—to be phys-
prepared to meet the rigors of com-
There is a growing awareness in our
n of the importance of physical fit-
and good overall health. Your Army
d spearhead that awareness.
e 1983 theme, an "Army of Excel-
" summarized the condition and



General of the Army Douglas MacArthur

goal of the Total Army. By that year's end, we had made great strides in the quality of our personnel, equipment and training and in our ability to deploy and fight anywhere in the world. Excellence became more than a catchword; it became a measure of the resurgent Army.

Last year, it was the "year of the Army family." The theme addressed three important aspects of the Total Army—the loyalty a soldier has to the unit structure of which he is an integral part; the relationship the active Army and the reserve components have to one another; and, of course, the human element, the families who stand with our soldiers in service to the nation.

Leadership encompasses and builds on each of the four previous themes. The spirit of victory is not swept away; our commitment to physical fitness is not forgotten; our insistence on excellence has never diminished; and our obligation to the Army family is not neglected.

The designation of a new theme each year does not mean others are abandoned. They are designed to reinforce each other.

I ask you to consider the words of Texas Lt. Col. William Barret Travis at the Alamo:

> The enemy has demanded a surrender at discretion . . . . I have answered the demand with a cannon shot, and our flag still waves proudly from the walls. I shall never surrender, nor retreat. I am determined to sustain myself as long as possible and die like a soldier who never forgets what is due to his own honor and that of his country: victory or death.

America is a powerful force and a great ideal. It is a moral force, rooted in Western values and the Judeo-Christian heritage. It recognizes the inestimable worth of every individual. Truth and reason, justice and liberty—these are the pillars of a society that enables its citizens to pursue happiness.

President James Madison would say that "if men were angels, no government would be necessary." In the closing years of the twentieth century, man's inhumanity is still with us.

I wish that there were no terrorism. I wish that there were no Berlin Wall that divides East from West. I wish that there had never been an invasion of Afghanistan or war in the Middle East to make the Holy Land a bitter ground. I wish that Africa were a place of peace and plenty, not famine and conflict.

I wish that there were no nuclear terror requiring the countries of the free world to maintain nuclear capabilities to deter nuclear attack, thereby maintaining national preservation. I wish there were no insurgency in El Salvador, or military buildup in Nicaragua, or weapons being sent from Cuba to spawn wars in Central America. But all these things exist. My wishing they did not is not going to make them go away.

I know this is a troubled and dangerous planet, and I remind myself that most of this world is not free. Yet I also know that a strong defense is vital to a free America and a stable world. It is a shield behind which the forces of social progress and democracy can take root so that fledgling nations committed to democratic values can give to their people the opportunity to pursue happiness.

The spirit of American military leadership, past and present, has brought us to where we are today, and it will help guide us to where we need to be in the next century.

In drafting our Declaration of Independence, Thomas Jefferson wrote:

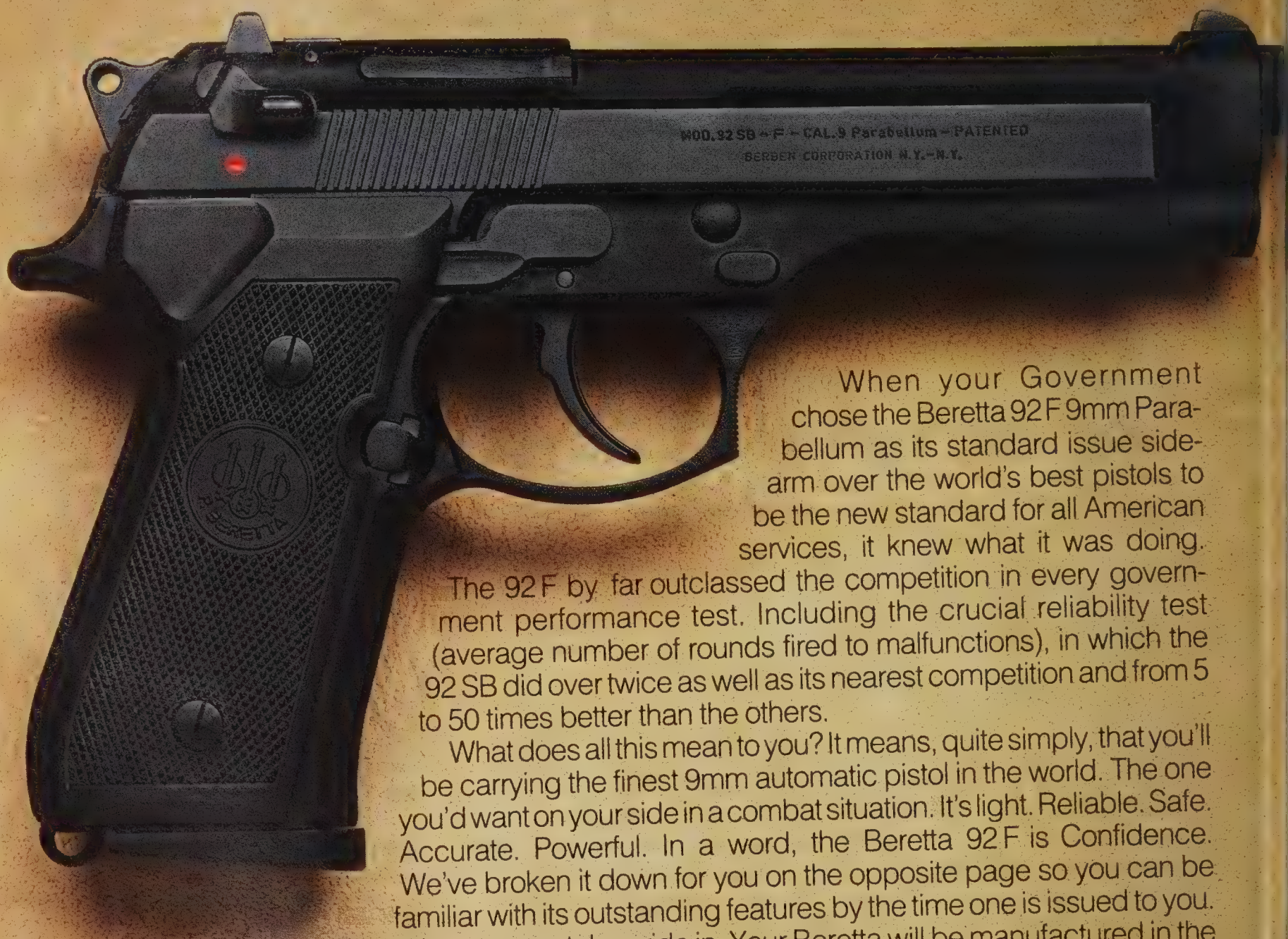
> We hold these truths to be self-evident: that all men are created equal; that they are endowed by their Creator with certain unalienable rights; that among these are life, liberty, and the pursuit of happiness.

John Quincy Adams, upon the celebration of the anniversary of our independence in 1821, stated:

> From the day of this declaration the people of North America . . . were a nation, asserting as a right and maintaining by war, its own existence. A nation was born in a day.

The same indomitable American spirit depicted by our great leaders throughout history lives on, protected by and embodied in our Army today.

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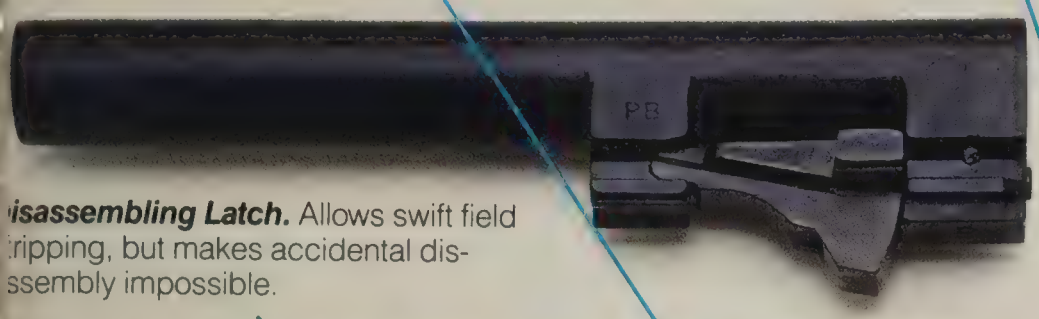
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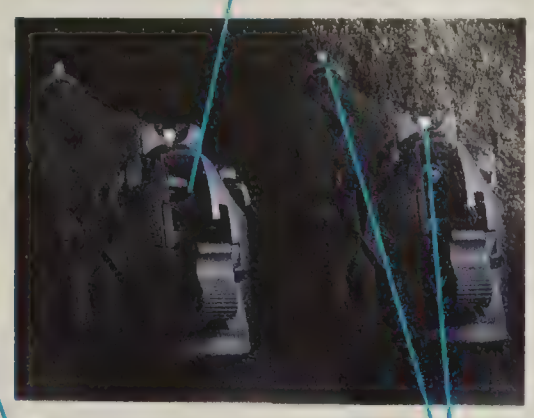
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Blocking Device. Prevents firing pin from moving forward until the trigger is actuated.

Unique Ultra Safety Design. The slide safety rotates the striker away from the hammer face so a falling hammer can never "break safety" and cause accidental discharge.

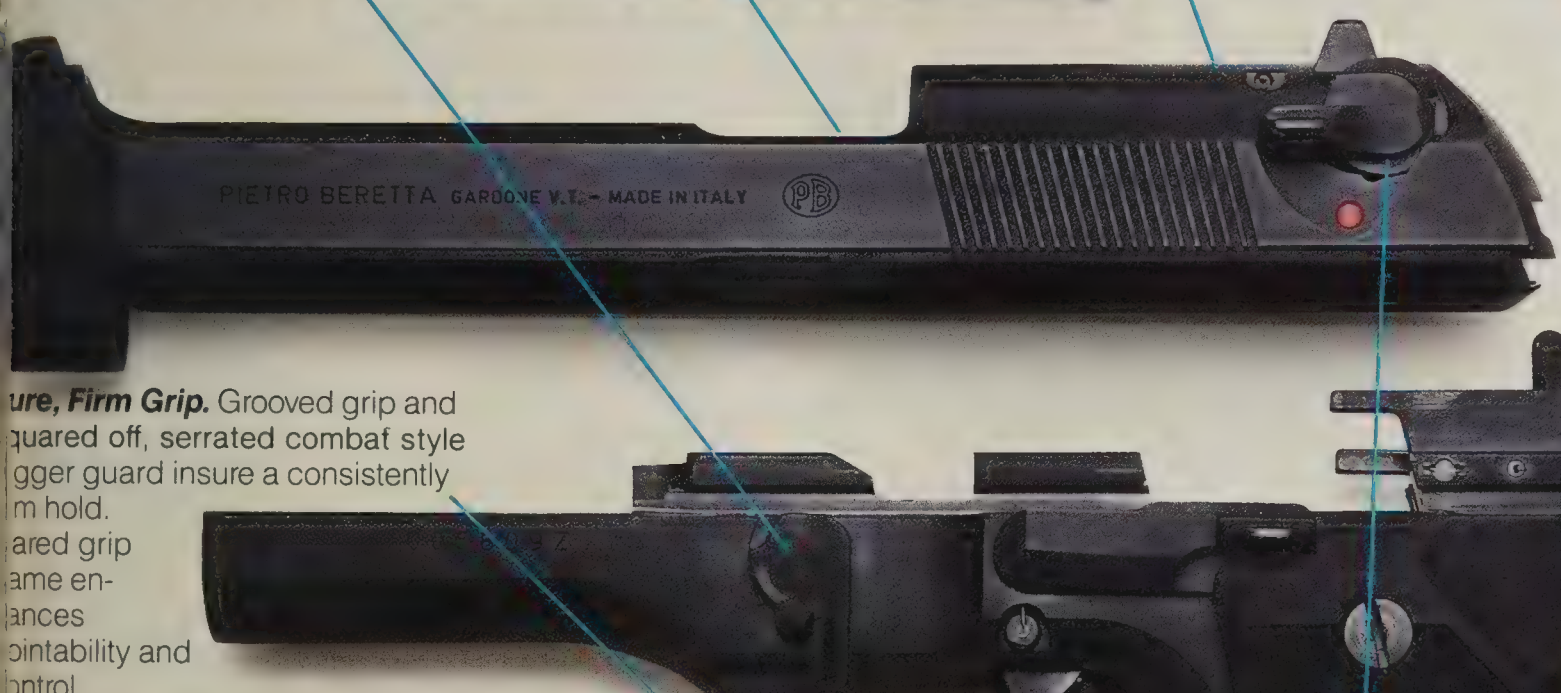




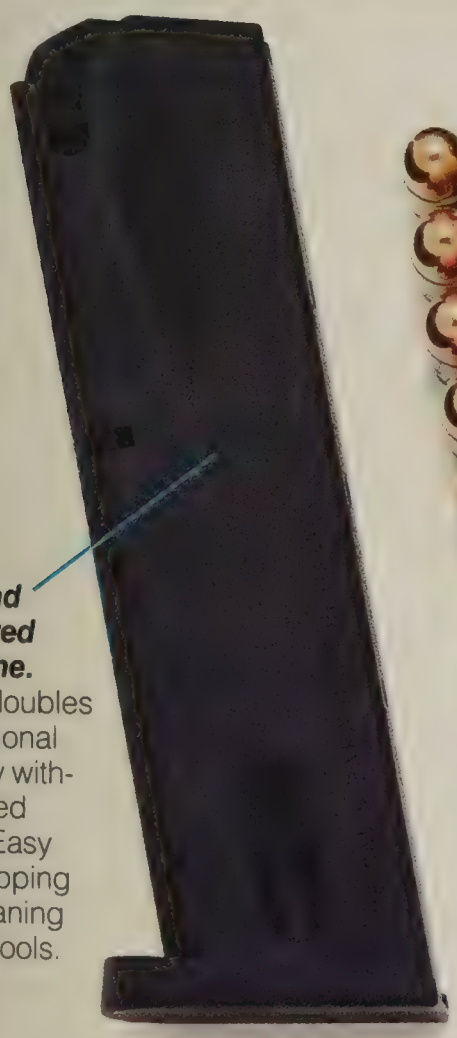
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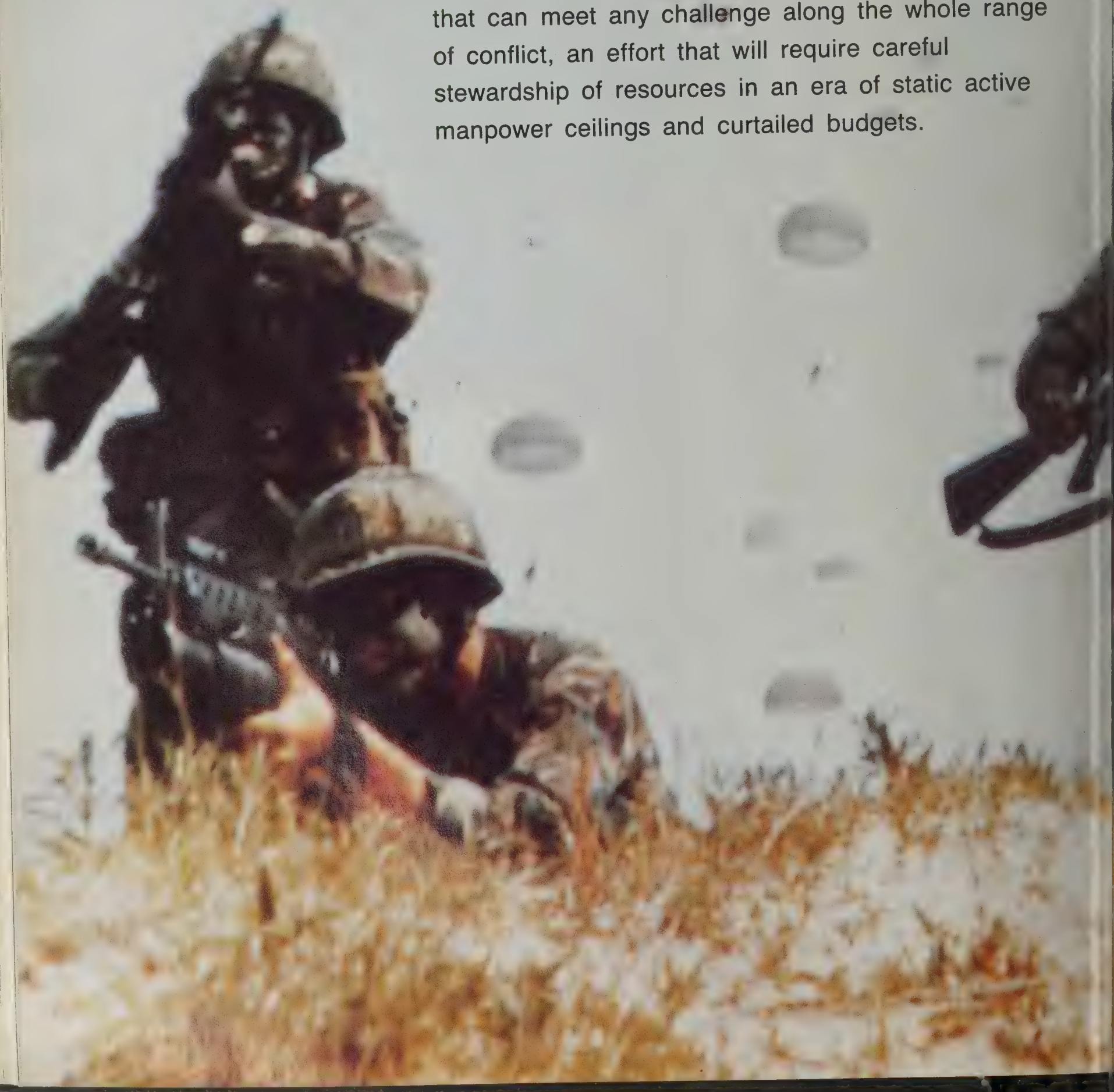
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By Gen. John A. Wickham Jr.
Chief of Staff, U.S. Army

Leadership Is Key in Coping With Wide Threat Spectrum

The Army aims to field a balanced, modernized force that can meet any challenge along the whole range of conflict, an effort that will require careful stewardship of resources in an era of static active manpower ceilings and curtailed budgets.



oday's Army responds to the challenges of an unstable and violent world by strengthening the na-'s ability to protect the freedom and rity of our citizens and allies. We acplish this goal by recruiting and reing quality people in our Army, balng our force structure, modernizing equipment, improving our training, ıgthening our soldiers' fighting spirit upgrading our sustaining capabilities. t the same time, the Army uses reısibly the resources entrusted to us to rove the living conditions of soldiers their families, to strengthen Army ership and to reinforce the stewardof Army programs and policies, pararly in the areas of weapons systems ıisition, force modernization and inteion, resource management and inforon management. All this improves ur readiness in a period of increasingly limited funds.

To complement these ambitious programs, the secretary of the Army and I establish an organizational theme for each year to provide strategic direction and emphasis. Forceful, steady leadership, the theme for 1985, underscores the previous themes.

Most would agree that leaders are made, not born. Therefore, we are committed to creating and sustaining a leadership climate where fighting skills, innovation, competence, character development and caring are rewarded. This climate enables leaders to lead by direct involvement and example and allows them not only to grow themselves but also to teach, coach and train their subordinates.

The Army has begun an extensive review of its leadership development systems for officers, warrant officers, NCOs and civilians to ensure that our young leaders are given the best opportunity to develop their leadership skills. This review affects the Army now and prepares tomorrow's leaders for the difficult tasks of fighting and winning on future battlefields.

Individual officers have long recognized the importance of continuing self-development and education to keep pace with changes in tactics, equipment and support concepts. Through a sequential and progressive system of education, training, socialization and assignments, leaders continue to develop the skills to lead the Army effectively and to manage its resources efficiently.

The 1984 "year of the Army family" theme provided the necessary impetus to improve support for Army families. Family initiatives include four themes: relocation, medical, family support/role identity, and education and youth. For the first time in the Army's history, we are programming funds to provide direct support to military families, as shown in Figure 1.



Figure 1. Army Family Program

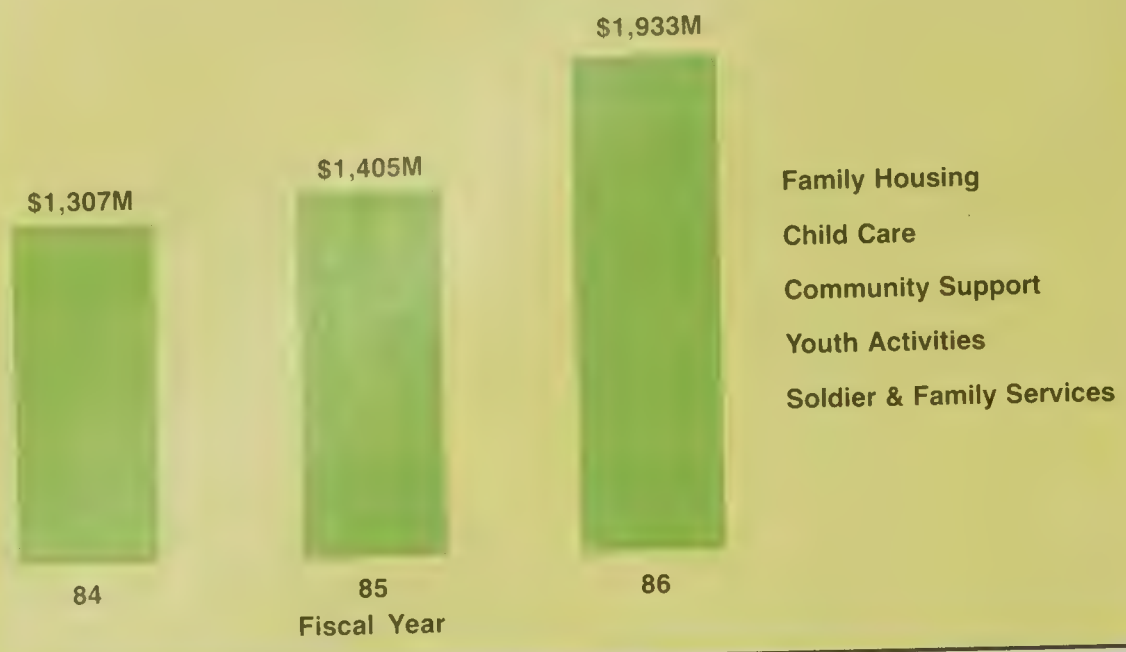
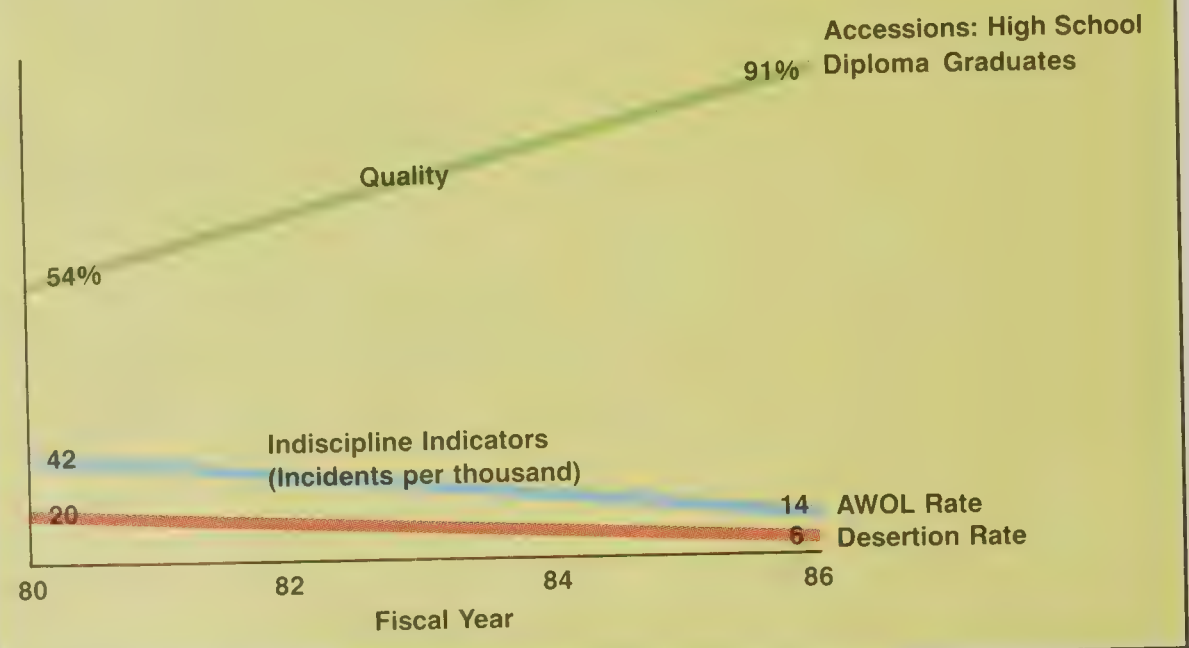
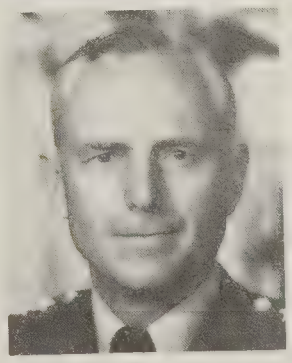


Figure 2. Quality vs. Indiscipline (Active Component)





GEN. JOHN A. WICKHAM JR. became chief of staff of the Army on 1 July, 1983, after having served as Army vice chief of staff for a year, following a three-year tour as commander of U.S. forces in Korea and Eighth U.S. Army. A 1950 graduate of the U.S. Military Academy, Gen. Wickham holds two master's degrees from Harvard University, one in public administration, the other in politics, economics and government. He is also a graduate of the Armed Forces Staff College and the National War College. During his 35-year career, he has held a wide variety of staff positions at Department of the Army and Department of Defense. He commanded the 1st Brigade, 3rd Infantry Division (Mech), in Europe in 1969–70, and the 101st Airborne Division (Air Assault) at Ft. Campbell, Ky., in 1976–78. Gen. Wickham served in Vietnam from September 1971 to January 1973 as deputy chief of staff for economic affairs, U.S. Military Assistance Command, Vietnam, and then as deputy chief U.S. representative on the Four-Party Joint Military Commission, Vietnam. His first tour in Vietnam was as a battalion commander in the 1st Cavalry Division (Airmobile), 1967–68, during which he earned two Silver Stars and the Purple Heart. During 1973–76, he was military assistant to the secretary of defense. Before assuming command in Korea in July 1979, Gen. Wickham served as director of the Joint Staff, in the Office of the Joint Chiefs of Staff.

Accomplishments to date include a:ce erated construction of child-care faci.iti and physical fitness centers, changes family housing policies, youth activiti programs, space-available dependent de tal care, suicide prevention program funding for overseas student travel, on stop job centers, a family fitness han book and training for all leaders on th family support responsibilities.

In November 1984, the Army solidifi its commitment to families by permanen establishing the U.S. Army Communi and Family Support Center to contin the momentum and ensure the consisten of family programs.

Over the past decade, the Unit States, its allies and its frier have been faced with a wide ra of unprecedented challenges and thre to their collective security. In Europe a the Pacific, the risk of war with the S viet Union will grow if U.S. milita strength is not maintained.

We must be prepared to cope wit broad spectrum of threats to our natic security, ranging from terrorism and l intensity conflict to conventional and e



Photo: Frederick Sutter

lear war. This complex challenge to national security demands that we e units capable of fighting in a wide ge of combat scenarios led by innova- and competent leaders.

While our potential adversaries out- nber us, we stress superior manpower, ipment, organization, training, sus- ability, mobility, doctrine and struc- .

Manning. The percentage of recruits n high school diplomas has increased ificantly. Recruits with high test scores egories I through IIIA) continue to r the Army in impressive numbers. ns in first-term quality (see Figure 2) allow us to limit reenlistment to com- nt, professional soldiers with demon- ted leadership potential. Reduced crime istics, lower AWOL (absent without e) and desertion rates and a significant ease in drug abuse rates further attest he quality and professionalism of to- 's soldiers.

Increased recruiting resources and expertise, enlistment bonuses, the new GI Bill, the new Army College Fund and "quality-of-life" programs provide incentives that help attract and keep the soldiers we need. Actions to improve recruiting facilities, lease new ones where needed and make them highly visible and attractive also contribute to recruiting successes.

However, erosion of benefits or programs and changes in demographics could hamper the success of future recruiting efforts. Therefore, we must continue these programs which enhance our ability to attract and keep highly qualified people.

We have established a number of programs to improve soldiers' professional development. A series of manuals that better link the service school, the individual and the unit commander now standardizes officer training from precommissioning through the grade of captain. The staff officer course at Ft. Leavenworth's (Kan.) Combined Arms Services Staff School (CAS^3) involves nine weeks of intensive training, taught by hand-picked instructors (40 to 50 percent are former battalion commanders) in a challenging environment.

In addition, the School of Advanced Military Studies at the Command and General Staff College (CGSC) provides selected officers with a deeper education in the science and art of war at the tactical and operational levels.

Students are chosen from the regular CGSC course and remain at Ft. Leavenworth for an additional year. Five Army War College selectees attend as senior fellows for one year and as instructors for a second year. Graduates' assignments are carefully monitored to assure that they serve in important operational or planning positions.

All warrant officers now receive requisite training in officer skills and technical certification before appointment. Newly added noncommissioned officer primary and basic technical courses produce trained first-line maintenance and supervisory personnel. All of this training contributes to deeper knowledge and increases soldiers' capabilities to operate the modernized systems that are entering the force at an accelerated pace.

The Army's new manning system will produce cohesive, well-bonded and stable



Army policy now recognizes that the soldier's family, its problems and welfare, is an integral part of the readiness picture: an officer of the 24th Infantry Division (Mechanized) spends a few moments with his family before departing for a field exercise.



Army Chief of Staff Gen. John A. Wickham Jr. reviews exercise plans with officers of the 9th Infantry Division (Motorized) at Ft. Lewis, Wash.



To the halls of Montezuma came reports of mysterious men from the sea—men with swords more lethal than the clubs and spears of the Aztec warriors. These strangers rode deer without horns and carried sticks which spat fire and stone.

They arrived at the Aztecs' dazzling capital in 1519. Believing the procession to be the coming of the god Quetzalcoatl, Montezuma did not analyze the aims, abilities or mission of the aliens. Against the advice of his council and nephew Cacama, who urged resistance by force or deception, Montezuma failed to call upon his army which outnumbered the strangers 1000 to one.

His troops could have easily annihilated the invaders or cut off their escape, isolating and starving them into surrender. Instead, the noble but naive leader welcomed the conquerors.

Thus, the Aztec empire—rich, cultured, advanced in agriculture, arts and the sciences, with a population of five million, was brought to its knees by 600 men, 17 horses and 10 artillery pieces.



Other great civilizations have disappeared over
he years because their military leaders failed to recognize—
)r ignored—the strengths, capabilities and intentions of
heir adversaries.

Today, for a nation to protect itself from aggres-
ion and deception, it must have reliable command, control
ind communication systems. So that commanders can
ecognize possible threats, make sound decisions and take
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units and foster a greater sense of soldiers' pride and belonging.

The first facet is the COHORT (cohesion, operational readiness and training) unit movement system that establishes a three-year cycle for selected units. This life cycle allows groups of new soldiers to progress through initial entry training, join their chain of command and remain together in a functioning unit until the end of their initial enlistment. Infantry, armor and field artillery company-level units are currently being evaluated, and the initial results are encouraging. Expansion to battalion-level COHORT is now being initiated.

The second facet, the U.S. Army regimental system, will unify combat arms soldiers through repetitive troop unit assignments of officer and enlisted personnel to the same regiment.

The critical test for proposed changes in the military retirement compensation package is the force-shaping and combat-readiness effect it will have on the Total Army. The military retirement system is not an old-age pension plan but a plan to maintain a youthful, combat-effective force and a mobilization pool of retirees subject to involuntary recall to active duty.

Military retirement costs are a necessary element of national defense expenditures. The military retirement system, already cut by 15 to 20 percent since 1980, is not lavish. For example, the typical retiree receives less than $1,000 per month, and 48 percent receive retirement pay below the poverty level for a family of four. To further cut military retirement would damage the Army's readiness and could place the volunteer concept at risk.

The programming and budgeting efforts of the past few years reveal significant progress in improving medical equipment for hospital units and increasing medical personnel for wartime requirements. The current budget contains one year of a multiple-year funding program that will equip or modernize all of the Army's combat hospital units, division-level medical units and National Guard and Army Reserve units. Major construction projects at 12 hospitals and two clinics are progressing.

Improving the central appointment system and providing higher-quality and more accessible ambulatory care are additional issues being addressed. Also, for the first time, the Army extended the 40-and-over medical screening program to Guard and Reserve personnel.

The civilian work force, providing much of the Army's sustaining base, is an inseparable part of the Total Army. Civilian employees perform key support functions, such as equipment maintenance, procurement, supply, research, real estate and financial management. Consequently, t Army faces challenges to recruit, reta and motivate an increasingly profession work force and to ensure adequate civ ian support measures.

The civilian substitution program converting military positions to civili positions, thereby freeing military ma power for higher priorities, transfers a ditional responsibilities to the civili component. Now we must stabilize civ ian strength at slightly above 400,0 people by substituting capital for lab and developing the best organizations can.

■ *Equipping.* Providing the Americ soldier with better equipment than enemy is the Army's goal. Superb syste like the M1 Abrams tank, the M2 Brad fighting vehicle, the multiple-launch roc system (MLRS) and the Black Hawk licopter are being fielded with great s





Photo: Frederick Sutter

Under AirLand Battle doctrine, suppor soldiers must know how to fight and survive in the field: a vehicle maintenance mechanic is at work during a desert field exercise.

despite some growing pains with lity assurance. The Apache attack he- pter, the Patriot surface-to-air missile em and a host of other systems will n provide our soldiers more of the litative edge they will require on the dern battlefield.

he Army is improving the information urces of commanders and decision ers at all levels and in all environ- ts, ranging from peacetime to inten- combat. We are making significant gress with communications to the joint combined areas and the strategic s that allow worldwide communication. he mobile subscriber equipment (MSE), h represents the most important com- ications system in the fiscal 1986 bud- request, is part of "Tri-Tac" (tri-ser- tactical), a joint service program to lop and field automatic switched area munications equipment.



Photo: Frederick Sutter

24th Infantry Division troopers check ver the tool sets and other equipment of their armored personnel carrier.

The single-channel ground and airborne radio system (SINCGARS) provides the next generation of VHF FM (very high-frequency, frequency modulation) combat net radios. In addition, the tactical Army combat service support computer system (TACCS) and the unit-level computer (ULC) are being fielded in active and reserve components units. They represent major commitments by the Army to improve our wartime readiness and peacetime management in tactical units through extension of this new technology.

Figure 3 shows the number of units that have been upgraded with new, modernized equipment since 1981. We have significantly strengthened the capability of Army units.

■ *Organizing.* Army force structure represents the number, size and composition of units and organizations that make up the Total Army. Achieving the optimum balance between heavy and light forces, the active and reserve components, combat and support forces ("tooth-to-tail" ratio), and forward-deployed and U.S.-based forces provides an important challenge. These optimum mixes will help us to achieve greater flexibility of response and take advantage of land forces' special utility in meeting future threats.

We have increased the number of active Army combat battalions while maintaining a constant, active-duty military strength (see Figure 4). Internal restructuring efforts, along with unit productivity improvements, civilian substitution and increased reliance on host-nation support and the reserve components, has freed active manpower to form these additional battalions. More will be formed in the future.

Since the end of the Vietnam war, the focus of force structure initiatives has centered on improving and expanding heavy forces to combat the Soviet threat to NATO. This type of mid- to high-intensity conflict involves the gravest, although least probable, risks to U.S. national security.

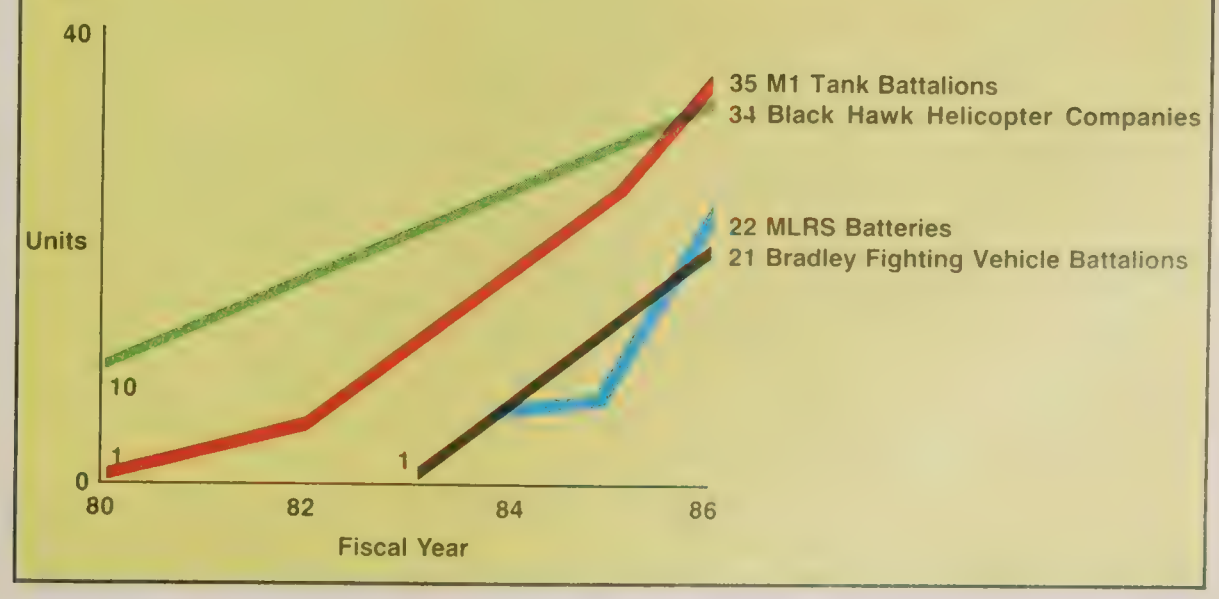
The actual nature of present world conflicts, however, largely involves low- to mid-intensity scenarios: terrorism, unconventional warfare and minor conventional warfare. The Army needs light, flexible, easily deployable forces to ensure that lower-intensity conflicts are deterred or controlled and do not escalate to higher levels.

Light infantry divisions mean strategically oriented, highly responsive units, organized for a wide range of missions throughout the world. They can deploy with speed and agility in a "precrisis" or low-intensity setting, yet they are robust and adaptable enough, when augmented, to remain survivable and useful when employed in a mid- to high-intensity scenario. Their approximately 10,600 personnel, compared with 16,000-plus in a heavy division, and lighter equipment permit these divisions to deploy faster with fewer airlift assets.

Rapid acceleration and expansion of materials research and development in recent years responds to the needs of light divisions. The increased strategic mobility of light infantry divisions permits an early commitment of forces to deter or defuse a developing situation at the lower end of the spectrum of conflict.

The 9th Infantry Division has reorganized into a high-technology motorized division. The division's design strikes a balance between the strategic deployability

Figure 3. Modernized Equipment in Units (Total Army)



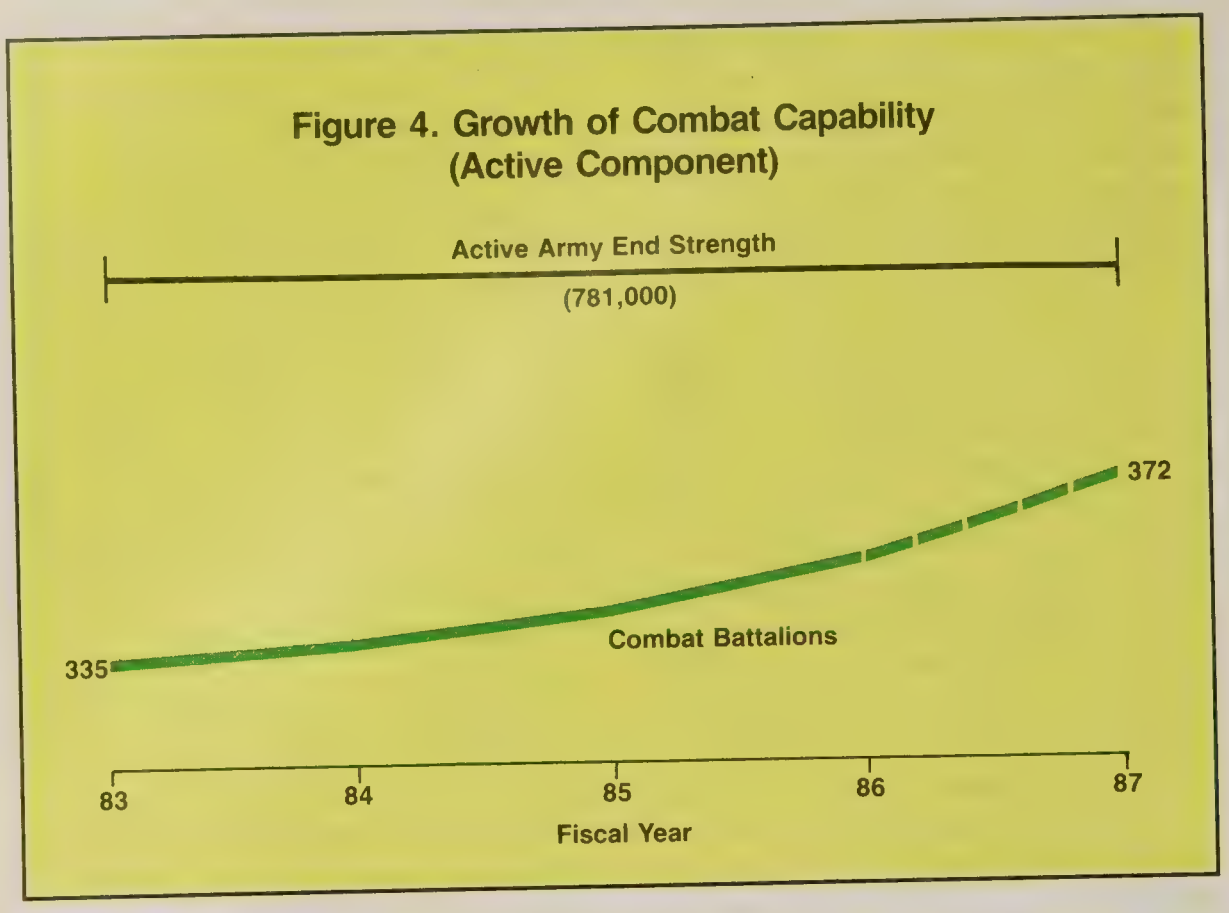


Figure 4. Growth of Combat Capability (Active Component)

and sustainability of a light division and the tactical mobility, firepower and survivability of a heavy division. Equipment needs, however, such as a mobile protected gun system to destroy armor, remain critical.

Our air assault and airborne divisions begin conversion to new designs in fiscal 1986 and 1987, respectively. In addition, we will continue to modernize these divisions by using lessons learned during development of the light infantry divisions.

A frequently overlooked aspect of our force modernization initiatives involves enhancement of the Army's special operations forces. These valuable assets—Rangers, Special Forces, psychological operations, civil affairs and special operations aviation units—provide unique capabilities to complement conventional forces and increase the total force's strategic flexibility across the entire spectrum of conflict.

Major force structure improvements include activation of the 1st Special Forces group at Ft. Lewis, Wash., and the 75th Ranger Regiment headquarters and a third Ranger battalion at Ft. Benning, Ga. In addition, the Army is increasing the authorized level of organization of many special operations forces, fielding improved weapons and communications equipment and enhancing special operations aviation capabilities.

In both light and heavy forces, we are reorganizing and expanding the Army's aviation structure to strengthen the division and corps commanders' ability to influence the battle. Conversion of heavy divisions to "Division 86" design continues for the active Army, the Army National Guard and the Army Reserve.

The 1984 "Army of Excellence" study recommended further streamlining of these divisions and strengthening of the corps to increase operational flexibility and improve our ability to implement AirLand Battle doctrine. We are modifying the force structure and forming a 28-division Total Army to increase our ability to respond across the full spectrum of conflict.

One of the most significant initiatives the Army has undertaken is an increased reliance on reserve components forces. As Figure 5 shows, they are being manned and equipped to handle significantly increased responsibilities.

These forces, consisting of the Arm National Guard and Army Reserve, a a vital part of the Total Army. Chang in mission, operational readiness level r quirements and resource availability ha caused the Army to place even great reliance on the reserve components. T day, the key is "the first to fight is t first to be equipped."

■ *Training.* To realize the full wa fighting potential of new doctrinal co cepts, force structure changes, equipme modernization and training excellence a essential. As a result of numerous init tives based on a "train as you expect fight" philosophy, we have better-train soldiers, crews and units. Today, the c of this philosophy stresses identifying a establishing priorities and performan standards for the tasks performed on morrow's battlefield.

The National Training Center (NTC an essential training asset. We contir to expand its use by having active, N tional Guard and Army Reserve ur train there to perfect their tactical pr ciency. Short of actual combat, t center provides the most challenging tra ing found anywhere.

National Guard and Army Reserve o seas deployment training has greatly creased, providing realistic, out-of-co try training for units whose wartime r sion requires deployment within the f 60 days of mobilization. Approxima 20,000 National Guard and Army Res personnel will deploy outside the co nental United States in 1985 and 23, in 1986. Deployment training strengt "Capstone" alignments, which link ac units and their supporting Guard and

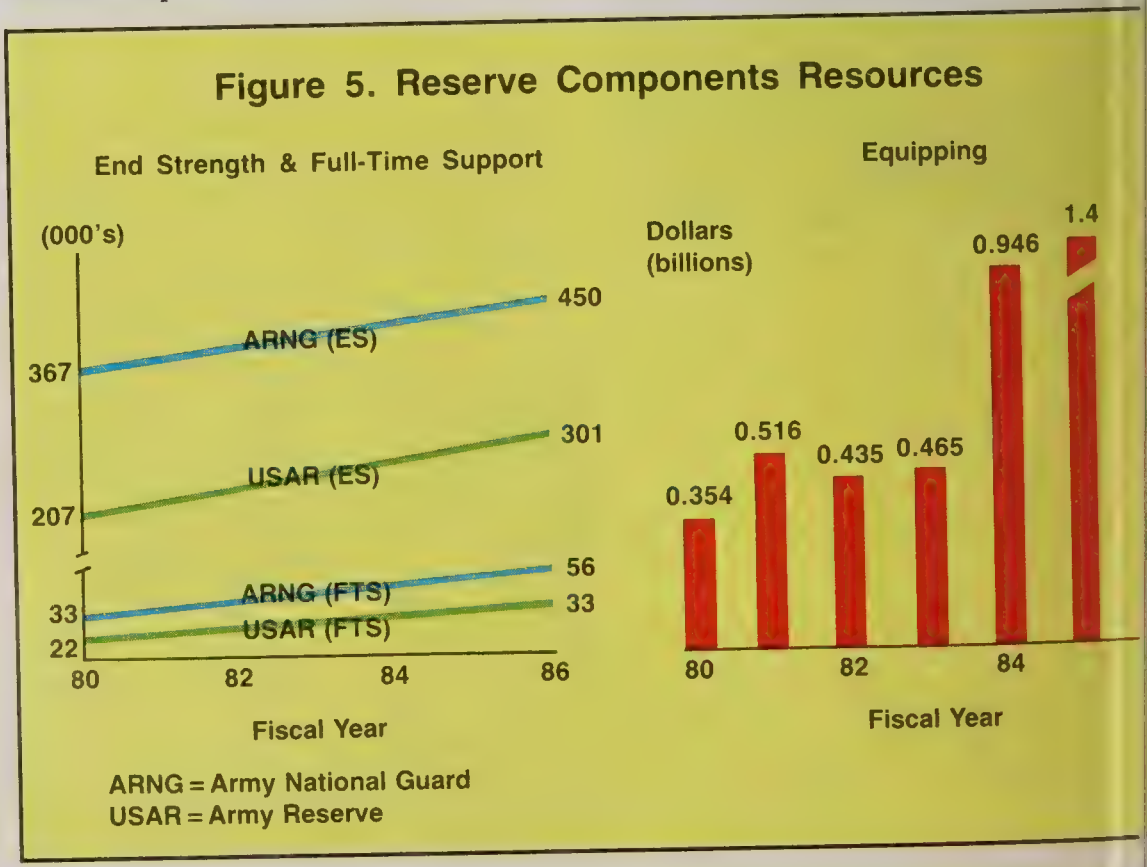


Figure 5. Reserve Components Resources

M113 family of vehicles



HOW TO IMPROVE ON A GOOD THING.

(For Less.)

Add inside space. With a Wedtech product improvement kit you can replace the present fuel tank with two external units on the rear ramp. This creates an additional 16 cubic feet of space in the crew compartment and reduces the chance of fire.

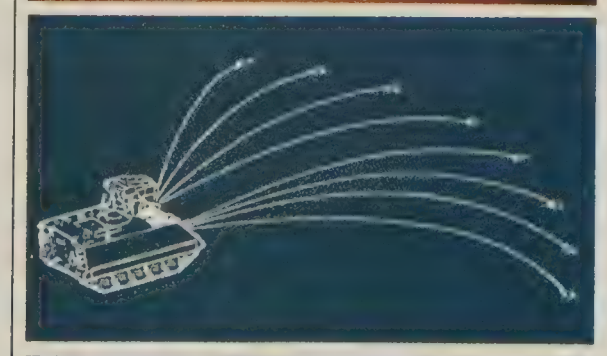




Increase top speed. Our improved suspension system and kit allows higher speeds up to 19 mph crossing open terrain. The kit includes newly designed torsion bars and shock absorbers which reduce the roughness of the ride.

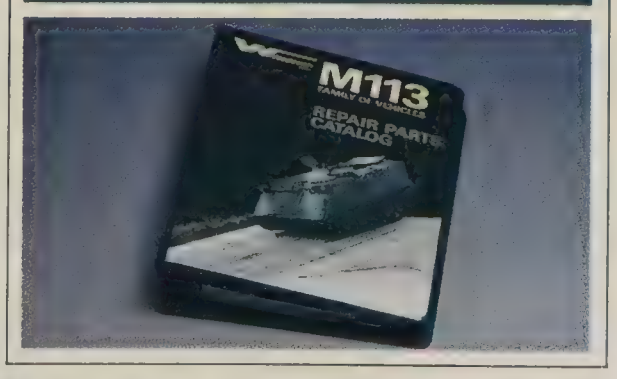
Reduce chance of engine failure. This Wedtech cooling system improvement kit cuts the danger of engine overheating. The kit not only increases cooling efficiency, but reduces maintenance by at least 20%.





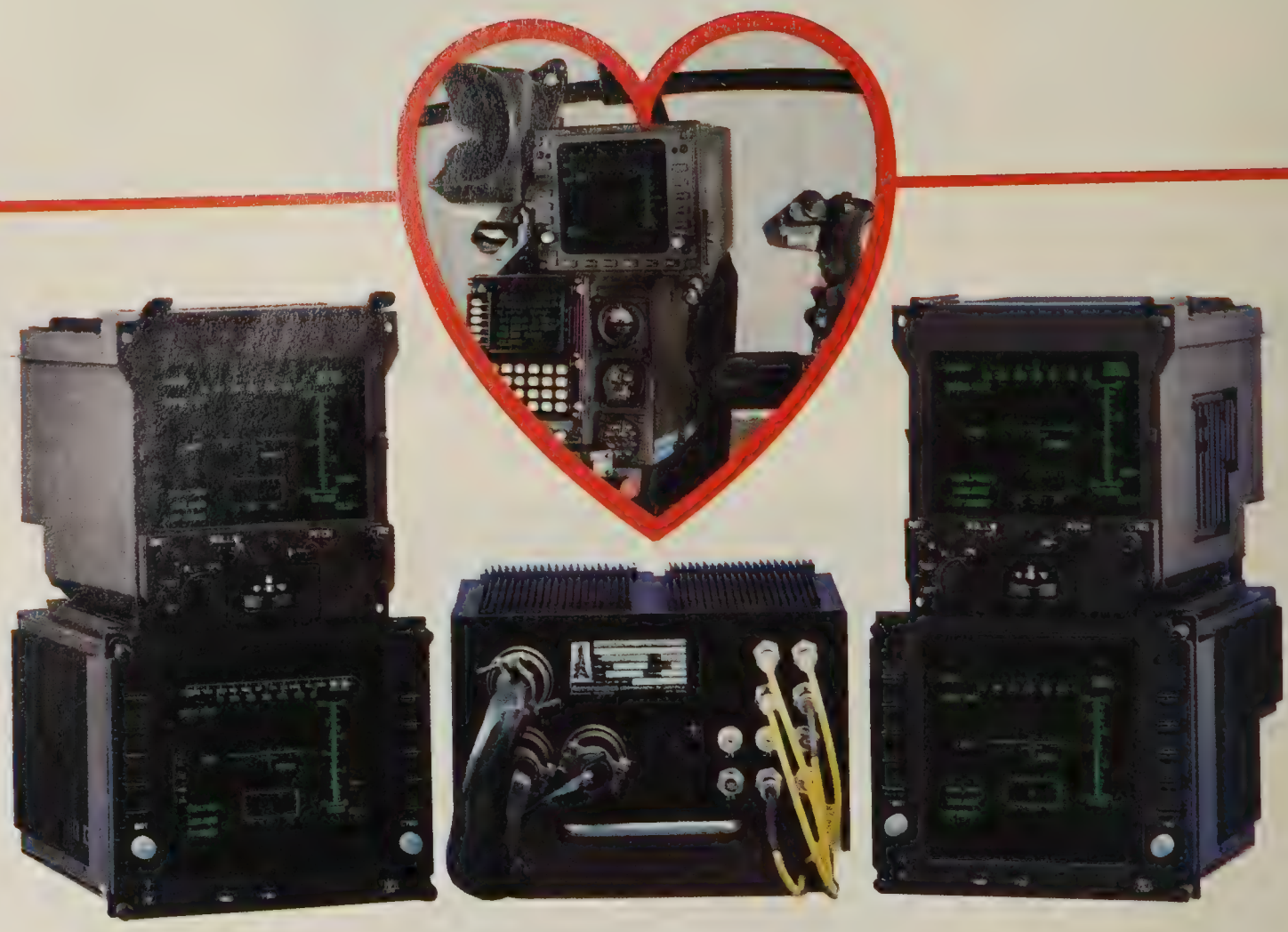
Confuse the enemy. The M259 will launch grenades that air burst and produce dense white smoke that hides vehicles and troops from enemy eyes. Launchers can be mounted on both sides of the M113.

Minimize downtime. With a ready supply of spare parts on hand, you gain high levels of operational availability. Wedtech manufactures over 600 repair parts for the M113 family of vehicles, all available for immediate pricing and delivery.



More for less. Wedtech is the company that meets or beats every MIL-spec for precision-machined components, improvement kits, systems, engines and causeway pontoons for the Department of Defense and allies of the United States. And always for less money. For more information, write or call Wedtech Corp., 595 Gerard Ave., Bronx, N.Y. 10451, (212) 993-8760, Telex 147281 NYK.

Wedtech Corp.



THE HEART OF IT ALL
ASTRONAUTICS' DISPLAY SYSTEM

The Astronautics' Display System is available with as many as four multi-function CRT displays, filled with easy-to-understand information. Each display presents independent symbology with separate, programmable symbology overlayed on FLIR or LLLTV video.

Never before has a pilot been able to call up so much information so quickly!

On the Hughes' 530MG Defender, for example, our display processor drives two multi-function displays — the control display unit and the armament and guidance display for the TOW missile system. These displays can be driven at separate line rates, 525 or 875.

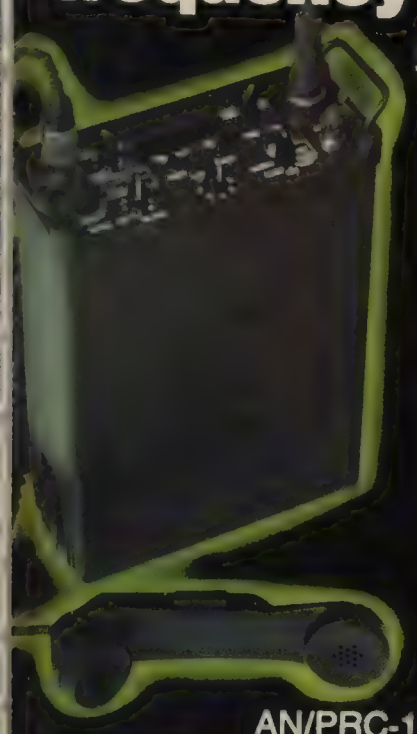
The heart of it all on the 530MG Display System is a high-speed, 16-bit, general purpose processor, which manages input and output in video, digital and analog formats. Two independent symbol generators each drive up to four unique raster and/or stroke displays.

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World Leader in CRT displays and Aircraft Instruments since 1959.

laintain tactical communications uperiority with the proven Harris AN/PRC-117, AN/VRC-94(V) frequency hopping VHF radio systems.

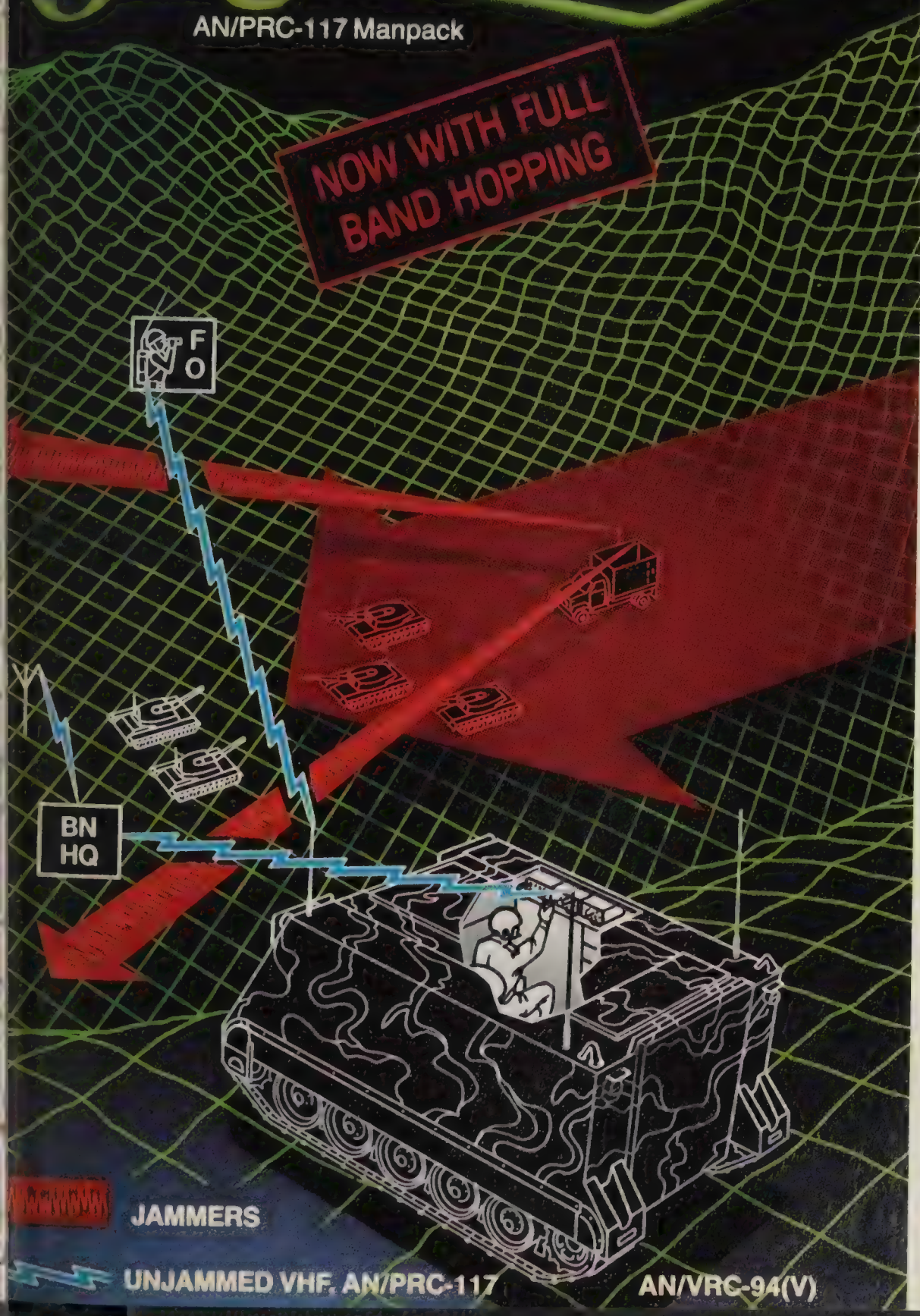


AN/PRC-117 Manpack



AN/VRC-94(V)-1
Vehicular Transceiver

NOW WITH FULL BAND HOPPING



When it comes to saving lives and equipment, having protected tactical communications is the final advantage. The Harris AN/PRC-117, AN/VRC-94(V) Series delivers freedom from jamming, detection and interference *in battlefield situations.* Conventional communications systems can't give you that kind of security.

Our lightweight, compact manpack sets a new standard for battlefield communications for ground troops. Our vehicular transceiver lets you maintain total communications control of APC's, tanks, recovery vehicles, ambulances and other vehicles. And our fixed station keeps your command post in constant touch with critical field operations.

Together, the three models of the transceiver—all field proven and nomenclatured—add up to the most technically advanced tactical communications system anywhere. Stack your current system up against these Harris features:

- **Electronic Counter-Counter Measure (ECCM)** frequency hopping makes jamming, detection, direction-finding and monitoring by the enemy virtually impossible. The signal changes frequencies hundreds of times per second according to a pseudorandom frequency-hopping pattern. Even in the field, the AN/PRC-117, AN/VRC-94(V) can be easily reprogrammed with 1.47×10^9 different patterns.
- **Built-In Self-Test System** with front panel readout to tell you, *in the field,* the status of your communications system. Defective modules are identified for field repair. No alignment necessary, replacement is fast and simple.
- **Simplified Training, Maintenance and logistics** through use of a common Receiver-Transmitter in all configurations.
- **Compatibility** with all current fixed-frequency VHF-FM tactical radio systems.

We've capitalized on our industry-leading technological expertise to make the new Harris AN/PRC-117, AN/VRC-94(V) Series the most sophisticated tactical radio communications system in the world and *yet the easiest to use.*

So when lives and equipment are at stake, entrust the protection of your operations to the Harris AN/PRC-117, AN/VRC-94(V). It's available now for immediate upgrading of your communication system. Call your Harris representative. Or write:

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serve units. It provides intense and demanding training in a real-world environment. National Guard and Army Reserve overseas deployment training includes participation in exercises such as "Reforger" in Europe, "Bright Star" in Egypt and "Team Spirit" in South Korea. Still another example of National Guard training is operation "Blazing Trails," a joint U.S.-Panamanian road-building project nearing completion which provides a 26-mile, all-weather road for residents of a once-isolated province. This project produced significant training benefits and furthered U.S.-Panamanian relations.

Range modernization is a critical part of our efforts to increase readiness through better training. It provides more and far better training facilities for active Army, National Guard and Army Reserve units. Advanced technologies permit replication of weapons systems and operational effects and increase substantially the use of simulation for Army training.

■ *Sustaining.* Sustaining represents the staying power of our forces and equipment. It ensures essential support to Army forces from beginning to end of any conflict to which the Army may be committed. We must plan and provision in advance to satisfy initial requirements.

We must prepare to expand industrial production and manning levels rapidly to match wartime demands. During the last decade, funding levels were insufficient to meet sustaining objectives; therefore, shortfalls which existed after Vietnam were never filled to the required levels.

War reserve stocks, (see Figure 6) of ammunition, major items and secondary items (engines, transmissions, and the like) are needed to sustain the combat effort until the production base can accommodate wartime resupply demands. We continue efforts to improve the availability of war reserve stocks.

Well-equipped and trained forces cannot deter or fight if they cannot mobilize and deploy rapidly. One solution to deal with those problems involves the prepositioning of materiel configured to unit sets (POMCUS) (see Figure 6). POMCUS is our program to store organizational equipment in company- and battalion-sized packages in a ready-for-use condition at the proper location.

The purpose is to position the majority of a unit's organizational equipment forward, so that in time of crisis only unit personnel, with minimum equipment, will require critical airlift to meet the overseas contingency requirements. Signif cant progress has been made, but mo increases are needed to improve rea ness.

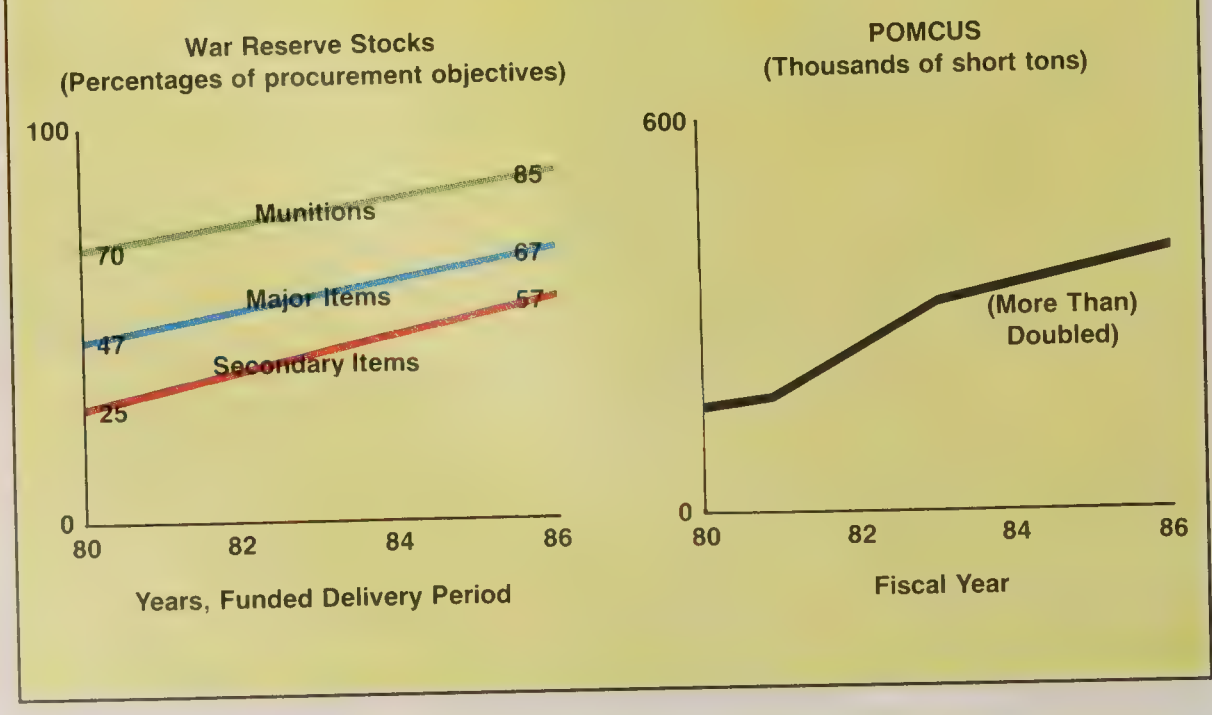
The Army operates and maintains a aging physical plant that consists of e tensive worldwide holdings. Past unde funding for the maintenance of faciliti has led to a massive backlog of wo needed to maintain real property asse Inadequate facilities affect readiness a sustainment adversely. Progress is bei made, however, and we are able to pa tially offset growing annual maintenan requirements while reducing the main nance backlog to a manageable level

Significant improvements in milita manpower sustainability have also be made. The Individual Ready Reserve (IR has been expanded to a fiscal 1985 p



Company officers and NCOs of the 5th Infantry Division (Mechanized) receive a field briefing in the rain.

Figure 6. Sustainability & Reinforcement



ted strength of approximately 290,000, omising a large, pretrained, individual npower pool for mobilization.

The Army has also improved and exnded its retiree recall program to preign retirees to mobilization positions. e retiree recall program currently has ,000 retirees preassigned to continenU.S. installations. In October 1984, rcise "Grey Thunder" at Ft. Jackson, ., tested installation recall procedures. irees will provide a valuable source of erienced mobilized personnel.

n addition to pretrained manpower, machinery to implement selective sere procedures must be maintained to vide additional manpower for trainif we are to be prepared for prolonged flict.

Other sustainability initiatives deal with requirements for tactical water supply, depot maintenance, roleum distribution, wartime medical port, preplanned contingency contract- and wartime host-nation support. r goals for 1985 and beyond aim at ucing the gap between stockage levels war reserve materiel and established ectives and improving our ability to et manpower sustaining requirements.

■ *Strategic mobility.* Adequate strate- airlift is most critical in the earliest s of a war or crisis. Airlift capability eing improved by adding a redesigned g to the C-5A fleet, buying more Bs and KC-10s, improving wartime raft utilization rates, extending the ice life of existing aircraft and enhancthe Civil Reserve Air Fleet capabilities. ding the C-17 airlifter, scheduled for ial operating capability in fiscal 1992, further reduce shortfalls significantly. trategic sealift provides the critical ability of deploying Army forces and aining their resupply. The Army needs upport programs that respond to the ine of the Merchant Marine fleet and ndustry containerization trends that e away from more militarily useful kbulk cargo sealift programs. The y, with our support, is preparing to t this challenge through a combination programmed increases to the Ready rve Force (part of the National De- Reserve Fleet) and enhancement prons to allow modification of containers to support unit equipment move- requirements.

he Army must be prepared to offload egic sealift in areas of austere or nonent port facilities. This mission is acplished through joint logistics-over-the-



Recruits learn the intricacies of the M16 rifle.



A light infantry antitank team fires a Dragon missile in training.

Photo: Frederick Sutter

shore (JLOTS) operations. Programmed increases in JLOTS capability are scheduled to complement increased Navy sealift while holding the line on personnel strength.

■ *Doctrine.* Army doctrine impacts directly on our ability to deter aggression and to win a conflict if we must fight. The Army developed AirLand Battle doctrine primarily for corps levels and below to provide guidelines to Army units on fighting a mid- to high-intensity conventional war.

"Army 21," a fighting concept focusing on the period 2000 through 2015, is under development. It will allow the Army to move deliberately into the future to develop doctrine and equipment, design forces and obtain resources to package and field needed forces. The rising number of low-intensity conflicts and acts of terrorism worldwide caused the Army to revise its doctrine to prepare for low-intensity conflict and to develop new doctrine to counter terrorism.

The Army cannot deploy or fight alone. We must have the support of our sister services. Air and sea power provide essential transportation, close air support and intelligence gathering resources. These close ties and similar requirements precipitated a major effort to improve the ability of the services to fight and work together. Joint cooperation programs involve

pooling resources for maximum results and improving interoperability. Reducing separate items and increasing commonality in logistics support functions will produce manpower and dollar savings.

Acknowledging these benefits, the chief of staff of the Air Force and I signed a memorandum of agreement (MOA) on 22 May, 1984. This MOA provides for better coordination of budget priorities, elimination of duplicative functions and modernization efforts, and better AirLand operations support and cooperation.

Of the original 31 initiatives, 15 have been implemented, with the remainder to be completed this year. Major accomplishments include: a joint office established by the Air Force Tactical Air Command and the Army's Training and Doctrine Command (TRADOC) to study intratheater airlift concepts and systems; termination of duplicative programs and cross-service agreements developed for mutual support in areas of air base ground defense, air defense electronic combat and surveillance systems; and agreement on a plan to transfer to the Army responsibility for rotary-wing lift support for special operations forces. New initiatives being reviewed are rapid targeting capability and future close air support. Additional initiatives will be added as new proposals are recommended.

A similar Army–Navy agreement will improve the balance of strategic sealift assets and joint logistics-over-the-shore. All the service programmers have signed a MOA requiring cross-service coordination during program and budget development. Improved coordination and cooperation between all military services in peacetime will improve this nation's military capability and help ensure effective joint operations in wartime.

After the nadir of the early 1970s, the growth characterizing Army funding in the past five years is being curtailed. Positive funding growth rates since fiscal 1980 have reversed the negative growth rates of the 1970s; however, the Army is still in the middle of its long-term modernization program and remains at best in a catch-up resource environment.

The adverse funding trend that began in fiscal 1983, and has continued downward since, will show a further reduction in fiscal 1986. There is real danger because the momentum of the programs started four years ago has been curtailed severely (see Figure 7).

Our modernization program will be set back seriously should the Army be forced to zero-percent real growth for fiscal 1986 and three-percent rates for fiscal 1987 and 1988. Readiness and sustainability will not meet objectives. War reserve stocks will remain short, depot maintenance backlogs will grow, reduced operating tempos and battalion field training days will lower readiness and we will not adequately support our unified commanders worldwide.

Up to six major programs could be terminated, and more than six major programs could be stretched out. Program deferrals and stretch-outs do not save money; they only increase risk and costs. A Department of Defense freeze would leave half finished the rebuilding of America's defenses begun four years ago and would undercut our efforts to lead NATO collectively to a stronger conventional defense.

Despite the increased commitments and mission demands of a 28-division total force, the Army decided to continue to limit its active strength to 781,000 soldiers and place greater reliance on the Army Reserve and the Army National Guard.

The fiscal 1986 budget projects continuing strength increases in both the Army National Guard and the Army Reserve. The recent reductions to the defense program, however, have caused the Army to slow the previously planned rate of growth in the National Guard and the Reserve.

■ *Stewardship of resources.* Today, it is imperative that Army leaders strive both to achieve maximum effectiveness and to improve the efficiency of operations. Two essential ingredients are required to obtain cost savings. First, we need soldiers and employees, in-house civilians as well as contractors, who want to do their job and do it well. Second, we need commanders and supervisors who recognize subordinates' potential and create an atmosphere conducive to excellence and improved efficiency.

Four areas of management emphasis for the Army in 1985 are: weapons system acquisition processes, force modernization and integration, resource management and information management.

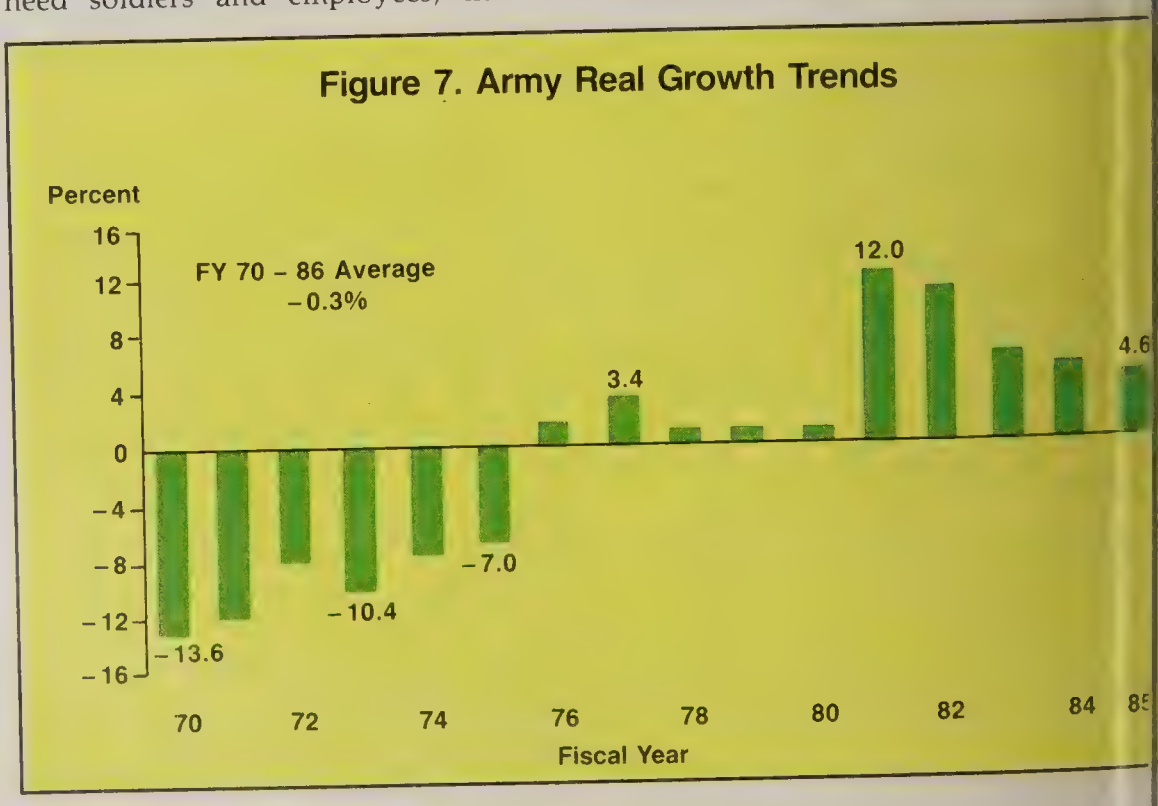
■ *Acquisition.* To improve its competitive posture, the Army recently appointed an Army brigadier general as the Competition Advocate General. He will work closely at every level of the Army, from requirements development through systems design to acquisition managers and decision makers, to reduce obstacles that inhibit acquiring quality goods and services competitively.

Research, development and acquisition management goals include better planning, improved management information systems, greater use of multiyear contracting, improved risk analysis and better quality assurance management. We intend to provide high-quality, reliable equipment to our soldiers.

The Army Materiel Command (AMC) is overhauling the way we develop and buy weapons, improving quality and hastening the equipment development and fielding cycles. The goal is to limit development to four years (two years for product improvements) and to test technology in the field with troops to identify and accelerate development of promising concepts. AMC is working with TRADOC commanders to devise realistic, long-range plans to identify deficiencies, lighten equipment and reduce costs.

Some research, development and acc

Figure 7. Army Real Growth Trends



Battlefield Firepower

The Close Combat Vehicle Light . . . armor-defeating capabilities for the light force.



The latest achievement in a proud heritage of vehicles produced for the U.S. Army, the Close Combat Vehicle Light (CCVL) uses the latest tracked vehicle technology. Developed and sponsored by FMC, the CCVL is our answer to the U.S. Army's XM-4 Armored Gun Systems requirements.

Significant Features:

- Automatically-loaded, 105mm gun system.
- Stabilized hunter-killer fire control.
- Capable of low-altitude, parachute extraction from a C130.
- Advanced armor systems.
- Higher horsepower per ton ratio than the M1 tank.
- Embedded diagnostics.

FMC's Close Combat Vehicle Light will be shown at the AUSA exhibit, October 14-16, in Washington, D.C.

For more information, contact the FMC Armored Gun System Program Manager's Office, (408) 289-3143.

FMC

A helicopter crew chief checks his machine's rotor and transmission.

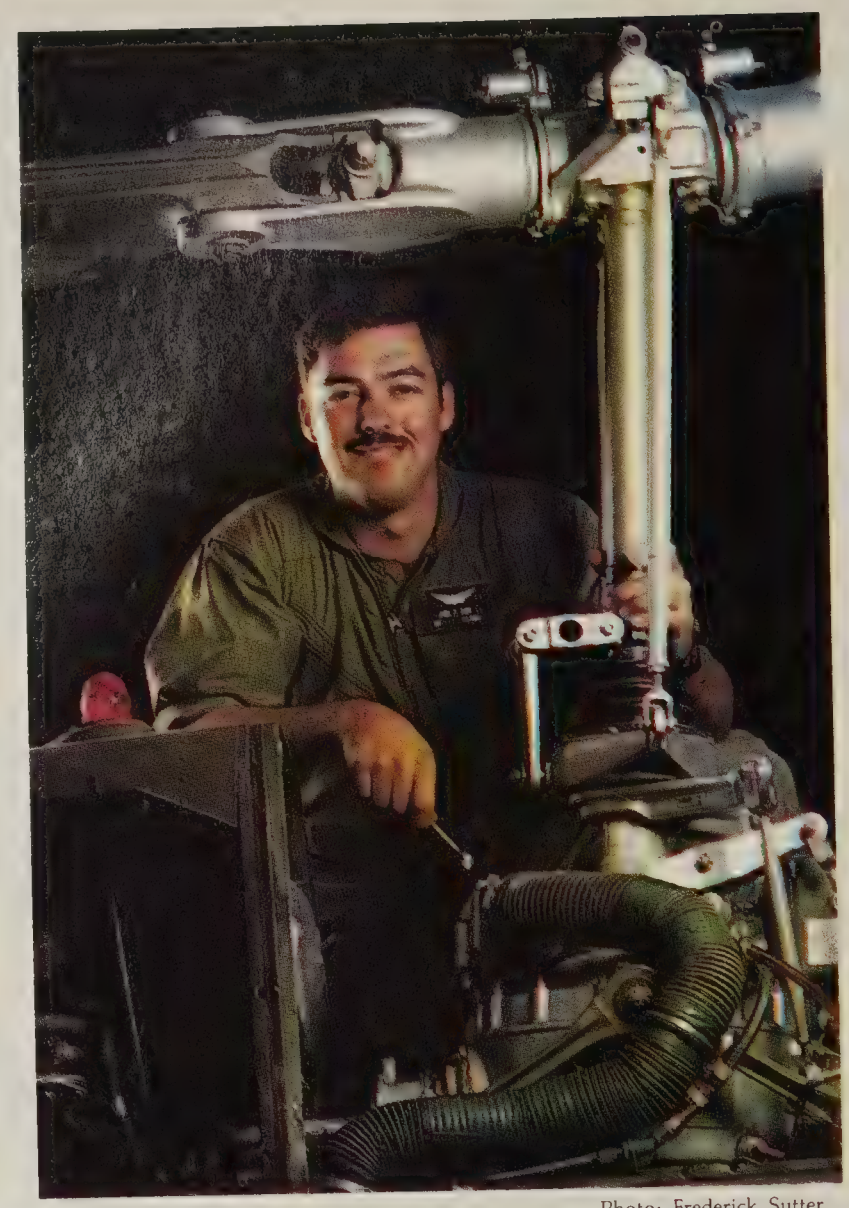


Photo: Frederick Sutter

sition initiatives involve obtaining the best value for the dollars spent by using items compatible with military requirements that are developed by industry for civilian use; that is, "nondevelopmental items" (NDI). In addition, if an allied nation develops a system which meets our needs, we will not develop a similar system.

The Army must increase its use of state-of-the-art, commercial items produced in existing commercial facilities. Prime examples of these are the commercial utility and cargo vehicle (CUCV), which serves not only Army needs but also those of all the services, the heavy expanded mobility tactical truck (HEMTT) and mobile subscriber equipment.

The Army Missile Command, through AMC, reports improved quality in weapons systems, resulting in better product for less money. Missile shelf-life extension via testing ammunition items in the field and at government and contractor facilities assures the safety and reliability of explosives. Eliminating as many missile failures as possible caused by microcircuits and semiconductors by using effective rescreening criteria at the lowest hardware level is another cost-effective pra-

Infantrymen practice the basic skills of fire and movement.



Battlefield Reliability

The Bradley Fighting Vehicle . . . on schedule, on budget, and exceeding performance requirements.



A key member of the combined arms team, FMC's Bradley Fighting Vehicle offers reliable firepower, mobility, day and night fighting capability, and armor protection for the infantry and cavalry soldier. Now in its fifth year of production, the Bradley continues to exceed performance and reliability standards.

- On schedule — more than 2,000 delivered; 1,700 already in the field.
- On budget — reduced manufacturing costs; FMC awarded DoD recognition for value engineering proposals saving the government millions of dollars.
- Reliable — the Bradley has demonstrated 580 mean miles between failures against Army requirement for 240 miles. Proven firepower — over 1.6 million 25mm rounds and 350 TOW missiles fired. With 3 million miles of use, Bradley attains operational ready rates higher than Army objective.

For more information, contact the FMC Bradley Fighting Vehicle Program Manager's Office, (408) 289-3746.

FMC



A squad leader of the 101st Airborne Division inspects his men's weapons.

tice. Two of many weapons systems demonstrating the successful application of rescreening are the Hellfire missile seeker and the Stinger missile.

The Ballistic Research Laboratory at Aberdeen Proving Ground, Md., will be the Army's first site for a network of supercomputers to begin operation by the summer of 1986. This increase in computer power will give AMC computer-aided designers their first opportunity to analyze complete weapons systems. Analysis will ultimately reduce development and life-cycle system costs, shorten development time, conserve scarce materials and provide optimum weapons systems performance.

■ *Modernization and integration.* The Army faces another series of management challenges in applying skills to integrate new equipment and to either transfer or rehabilitate displaced equipment. Our developmental and engineering research efforts are oriented toward fielding and improving specific systems.

To meet the challenges of the 1990s and beyond, the Army will place greater emphasis on "leverage" technologies that offer the potential for innovative, revolutionary change in military systems.

The Army is committed to exploring all opportunities to save weight, reduce cost and improve performance through the use of advanced materials in Army equipment. New technologies being developed produce lightweight, high-strength and reliable Army equipment.

Examples of these innovations are a new, lightweight, 155-mm howitzer; a new infantry helmet made of Kevlar, a lightweight material; a reinforced plastic for lightweight and medium-weight combat vehicles; and a ceramic thermal barrier coating for five-ton trucks to reduce significantly weight and volume of engines.

Very high speed integrated circuits (VHSIC), advanced visible and infrared technology, genetic engineering and computer-aided design techniques are also being explored.

The Army's new thrusts in technology will integrate, focus and apply high-leverage technologies in the following areas: very intelligent surveillance and target acquisition (VISTA) and distributed command, control, communications and intelligence (DC^3I). As a result, distribution of battlefield information among all levels of command, munitions technologies, soldier-machine interface technologies and biotechnology will improve.

■ *Resource management.* The Army's resource management system is developing many initiatives. Army commanders must use innovative approaches to meet the resource challenges associated with fixed active military and civilian strengths and limited dollar resources.

One such approach involves a new concept of financing the construction of facilities to support the stationing of the 10th Mountain Division (Light Infantry) at Ft. Drum, N.Y. The Army's objective is to gain quality facilities more quickly at the least cost through increased state and local government participation and private sector involvement in raising and operating a division post.

The Army participates in a model installation program and the model construction agent program. These programs encourage efficiency by identifying restrictions that inhibit effectiveness and when legally permissible, by obtaining waivers to these restrictions.

In April 1984, the Army designated Fort Sill (Okla.), Ft. Polk (La.), Anniston (Ala.) and New Cumberland (Pa.) Army Depots, Aberdeen Proving Ground (Md.) and the U.S. Army Support Command Hawaii as its model installations. Subsequently, we added overseas installations at Hanau and New Ulm, West Germany and Yongsan, South Korea. The Tulsa Engineer District is the Army's model construction agent.

During 1985, the Army will begin conversion to a standard installation organization structure for garrisons which operate Army installations and communities. This standardization will improve our mobilization capability, deliver better services to our people and enhance the management of installation support activities.

The Army is broadening its activities in value engineering, previously emphasized only in major systems development to include most major contracts. Value engineering has proven most beneficial in lowering costs while also improving the quality of items being procured.

A more aggressive commercial activities program represents another way the Army can achieve more effective use of dollar and manpower resources. This program compares the costs of government in-house operations providing commercial-type services with the costs of similar services provided by private companies. Competition between the government and



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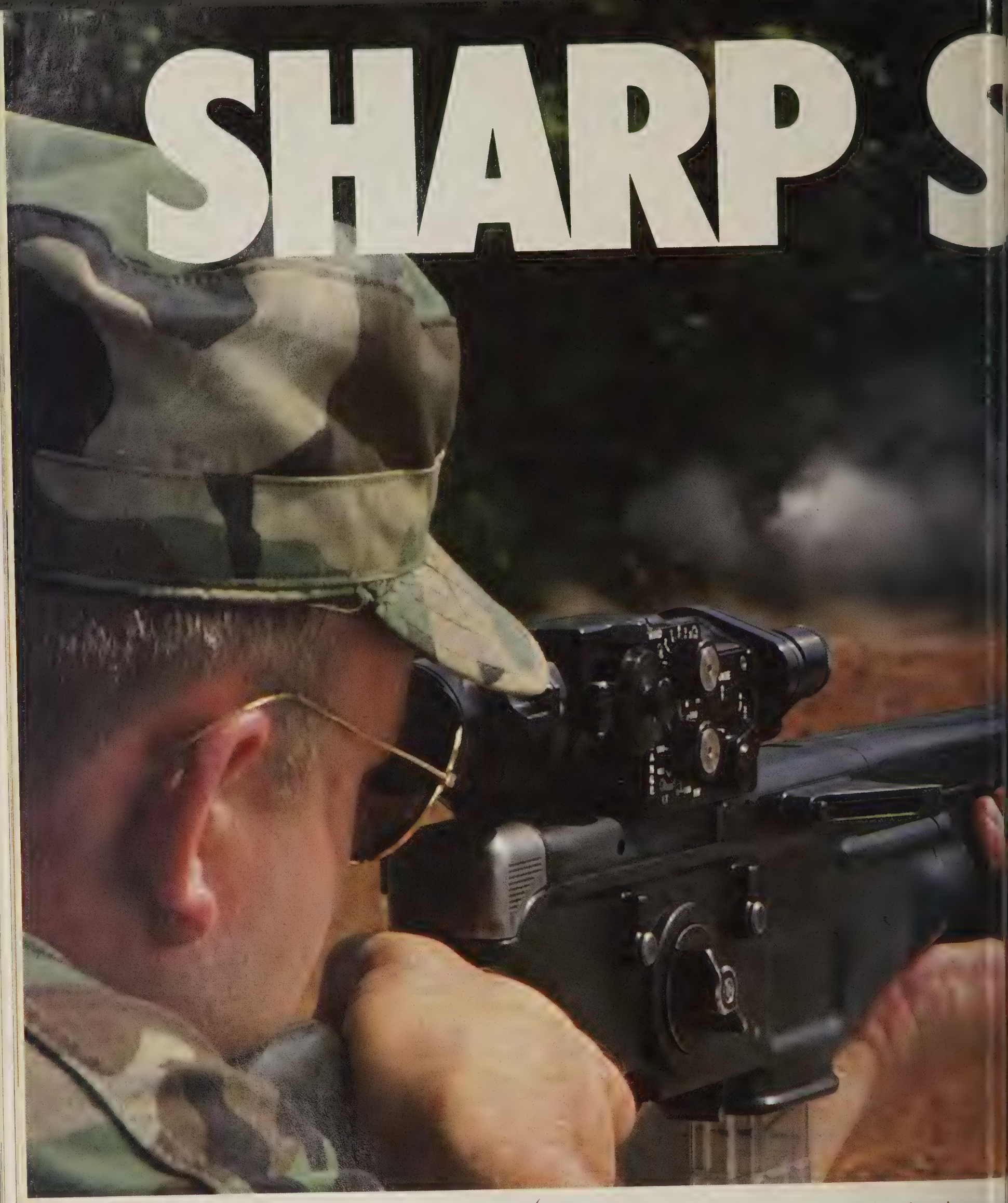
We back our systems with complete service and support. As well as an investment in research and development well above the industry norm.

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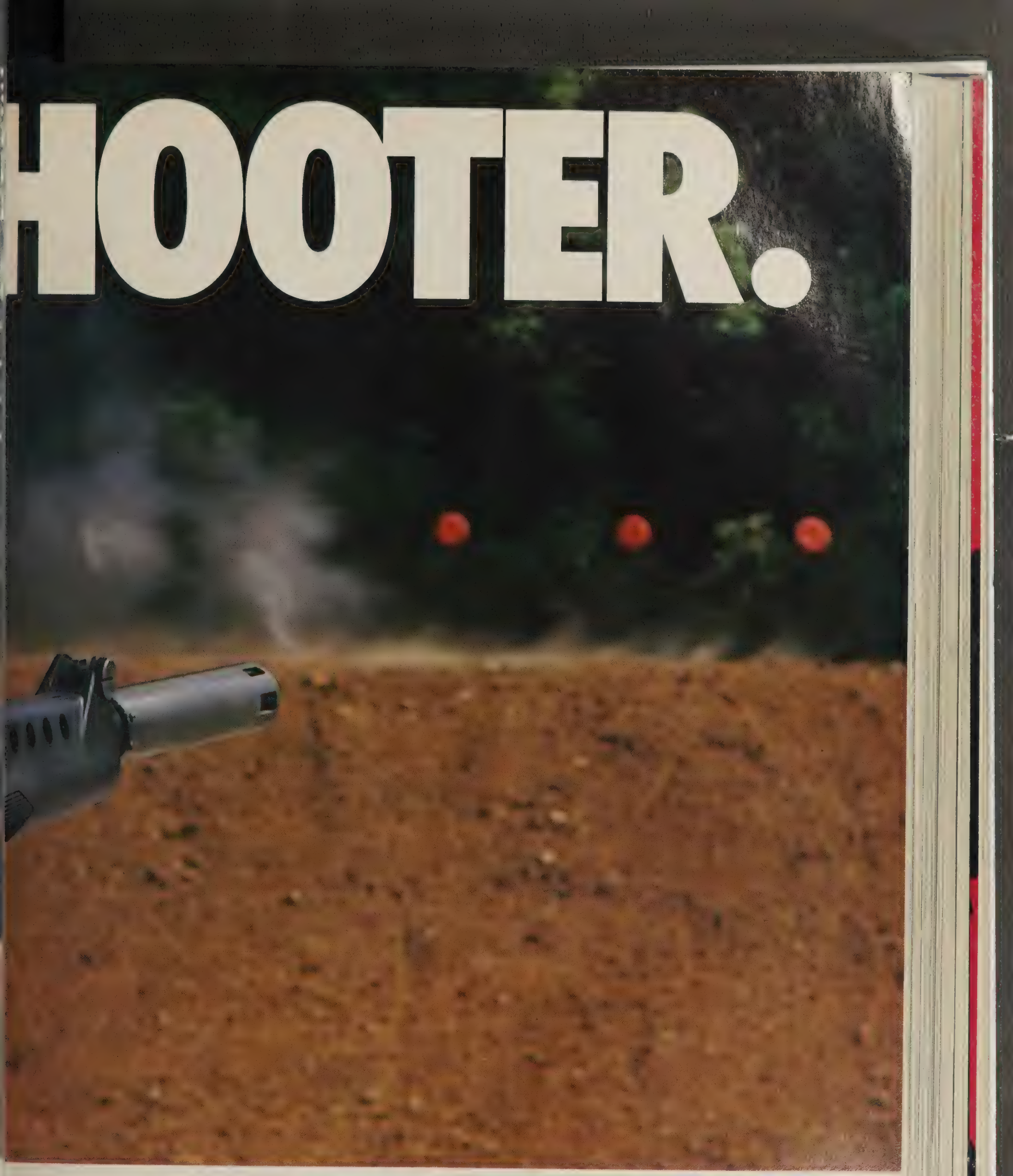
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The AAI Advanced Combat Rifle (ACR) is a sharp improvement over the M-16. Its unusual caseless-ammunition design reduces weight and it includes an enhanced optical sight for improved accuracy. It can be used in automatic, semiautomatic or 3-round burst modes and, in combat, its hit probability is projected at a 100% increase over the M-16. The ACR is a reliable, easily maintained rifle capable of cost-effective mass production.

The Advanced Combat Rifle typifies AAI's philosophy in developing high-technology electronic and mechanical systems.



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THE SENSIBLE SOLUTION



Photo: Frederick Su

By Gen. Maxwell R. Thurman
Vice Chief of Staff, U.S. Army

A revolution began in the mid-seventies and it continues today. In the late summer of 1974, Gen. Creighton W. Abrams, then Army chief of staff, attended an issues meeting with the secretary of defense. His purpose was to persuade Secretary James R. Schlesinger to reconsider a proposed Army strength cut of 30,000. He suggested that, if left an end strength of 780,000, he would form 16 divisions, an increase from 13⅓. The agreement was sealed with a handshake.

That gesture, together with the bold reorganization of the Army in 1973 and the marriage of the combat development process and the Army school system, was the catalytic agent for the renaissance of the Army. The legacy of th events is now in mid-life.

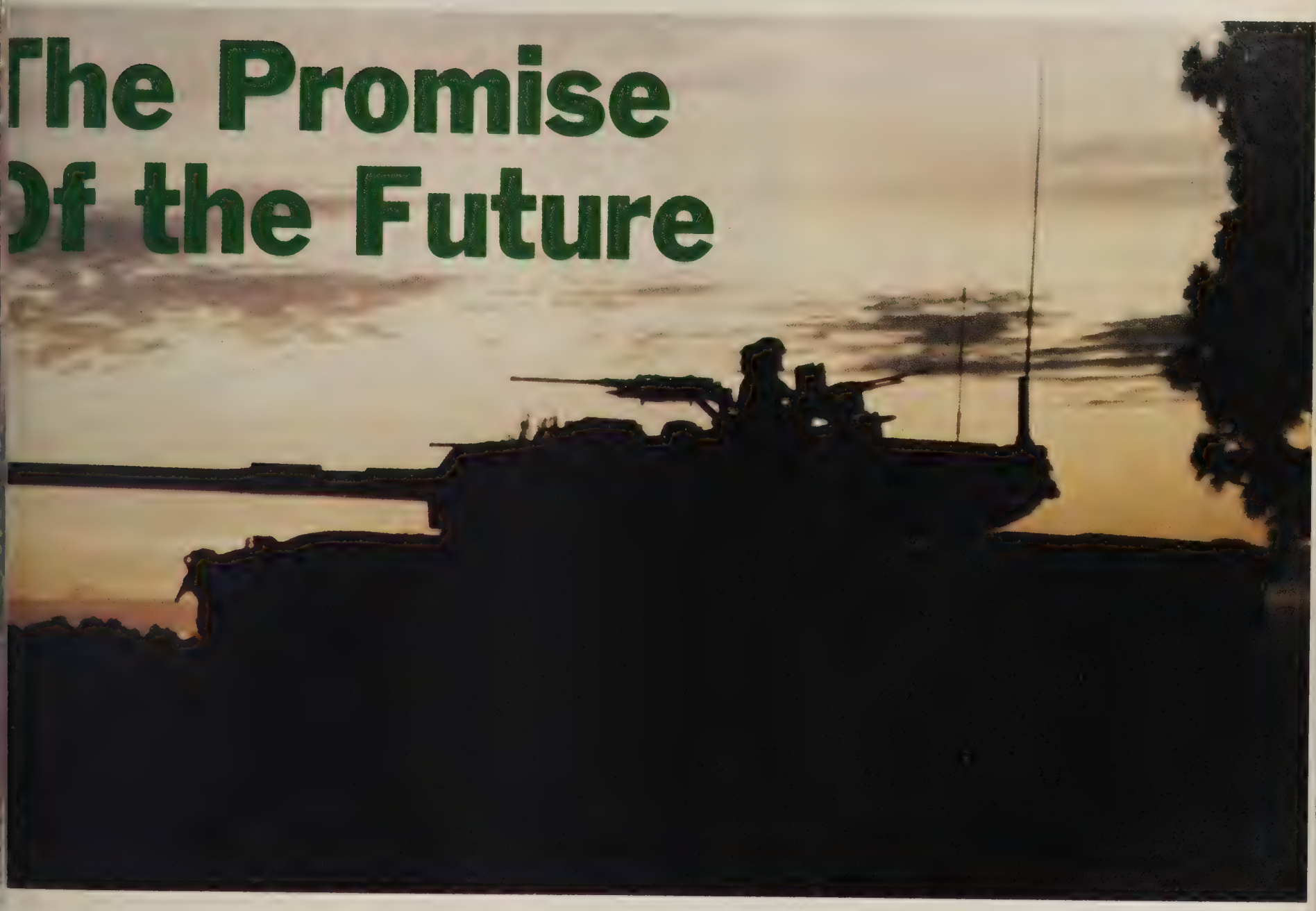
The modernization of the Army close operations in the main battle is about half done. Within a constant tive-duty strength of 781,000, three sions—the 5th, 7th and 24th, some 30 troops—have been formed at the exp of overhead, and the promise of more divisions, the 6th and 10th, is at hand.

Army doctrine for combat operat at the corps level has been created by combat development arm, and the A has begun the acquisition of major systems to carry out deep operatio

Combat-capable, modern, mechar equipment is rolling off American

Top-quality soldiers, innovative doctrine and new equipment have helped the Army create new combat power and versatility in the face of limited resources and diversifying missions; the renaissance began with a handshake over a decade ago.

The Promise Of the Future



on lines into the hands of troops. "Big Five" of yesteryear—the M1A1 ms tank, the Bradley fighting vehi- he Patriot air defense missile sys- the Black Hawk troop-carrying heli- r and its awesome companion, the he attack helicopter—are the main- of close operations, the crucible of at.

e Big Five are not alone. The multi- unch rocket system, "Tacfire," "Tac- "Trailblazer," Copperhead and "Tri- are also being fielded. SINCGARS s and mobile subscriber equipment ot far behind. The modernization of close-combat equipment must be ght to completion soon, because vic- in battle ultimately depends upon successful close-combat operations. We cannot fail at this crucial point even though outnumbered by our potential adversaries.

At this writing, four of the divisions earmarked for Europe have the world's best fighting vehicle team, the Abrams and Bradley, on hand. Two of the divisions—the 3rd Infantry Division and 3rd Armored Division—are forward stationed, and two earmarked reinforcing units, the 1st Cavalry Division and the 2nd Armored Division, are in Texas with their fully modernized prepositioned equipment stocks in Europe. Formidable. Force modernization can be done more quickly, but funding constraints preclude American production capacity from being truly challenged.

The Army has fielded about half the equipment with which to fight in close combat. It will take another five years to finish this modernization of Army active forces. Even then, we foresee the traditional high-low equipment mix continuing into the mid-nineties unless the full potential of our armaments industry can be unleashed to equip our National Guard and Army Reserve forces with top-of-the-line equipment. We are making progress in equipping our reserve forces—$1.4 billion of equipment in 1985 and again in 1986—but it, too, will continue to be a high-low mix.

The Schlesinger-Abrams handshake of the seventies laid the foundation for another crucial event in the revolution. In



'Tough, highly trained American infantrymen are now available for worldwide deployment in a matter of hours': troops of the XVIII Airborne Corps board an Air Force C–130 transport.

that agreement, the Army was given authority to retain a fixed strength in its active force and was given the incentive to inspect itself, to conserve and to become innovative.

Toward what? Toward the promise that, to the extent the Army could create additional combat power from manpower savings, those added combat forces could be retained in fighting divisions. The 5th Infantry Division ("Red Devil"), the 7th Infantry Division ("Bayonet") and the mechanized 24th Infantry Division ("Victory") stand as monuments to the wisdom of that enlightened agreement.

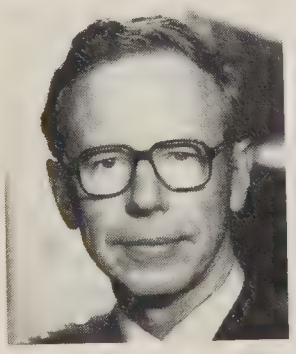
Real combat power, some 30,000 soldiers, have been gleaned from the "overhead" of the Army in the last ten years. These divisions are ready! Their troopers have been to the National Training Center (NTC), have distinguished themselves on exercises such as "Reforger," "Bright Star," "Team Spirit" and elsewhere and are available for deterrence and combat missions now.

At work has been a real effort at productivity enhancement. Better training regiments, enhanced use of simulation devices and reductions in overhead produce *real* conservation of manpower. Ill-defined support structure has been turned into robust fighting divisions now committed to Central Command and available for NATO reinforcement. In this history are the lessons for the future.

The action of Secretary of Defense Caspar W. Weinberger, his deputy, William H. Taft IV, Secretary of the Army John O. Marsh Jr. and Army Chief of Staff Gen. John A. Wickham Jr.—creating idly deployable light divisions—was once visionary and decisive. Raising more divisions, the 10th Light Infa Division (Mountain) and the 6th Infa Division (Light), within a constant ac personnel strength of 781,000, echoes Schlesinger-Abrams advisory: on the gin, create combat power through ductivity enhancements, headquarter ductions and the inspection of our i tutional structures.

nside the Army, it has caused a jor review of 25 years of unchalle force structure rules and comp models and has spawned the provisio of laborsaving devices to conserve power. While salutary, the real im lies in providing commanders of the ating forces—the theater joint comm ers in chief (CINCs)—with contin U.S.-based forces capable of arr swiftly.

Tough, highly trained American i trymen are now available for worl deployment in a matter of hours, division closure times measured in



GEN. MAXWELL R. THURMAN became vice chief of staff of the Army in July 1983, after having served as deputy chief of staff for personnel since August 1981. He was commanding general of the U.S. Army Recruiting Command from November 1979 to July 1981. Commissioned from the ROTC in 1953, Gen. Thurman holds a chemical engineering degree from North Carolina University at Raleigh. He graduated from the U.S. Army War College in 1970, after serving in Vietnam. His recent major duty assignments include: director, program analysis and evaluation, Office of the Chief of Staff, U.S. Army; deputy chief of staff for resource management, U.S. Army Training and Doctrine Command; deputy assistant commandant for combat training and development, Army Field Artillery School; commander, division artillery, 82nd Airborne Division; special assistant to the assistant vice chief of staff, U.S. Army; and team chief, program development team/operations research analyst, assistant vice chief of staff, U.S. Army.



ve days instead of weeks, providing
INCs with deterrent capabilities not
iously available to the national com-
d authorities. American combat troops
he ground are real deterrence. Deploy-
ty is deterrence.
ne Army's training regimen in raising
new light divisions has restored the
r of the infantry—the pride of the
y. Recruits trained together at Ft.
ning, Ga., are now earmarked to serve
years together in the same battal-
They are joined by a carefully select-
adre of officers and noncommissioned
ers (NCOs), all of whom have com-
d the new "light leaders" course,
2,500 graduating from the tough
ger School. Cohesion is further de-
ped through arduous field training at
Ord, Calif., in Hawaii, and soon at
Drum, N.Y., and in Alaska, making
light infantry units the best in the
d—a revolution in its own right!
ese light divisions are available to
y CINC. The American marker is
able for instant play. If required for
lefense of the western alliance, these
rican infantry divisions can make

substantial contributions. Used in heavily forested terrain found in the Hohe Röhn and Hassberge regions of West Germany, or in the sprawling urban areas of Europe, these infantry divisions can free up mechanized forces for employment as reserves for corps counterattacks. The infantry revolution!

Lt. Gen. Robert M. Elton, deputy chief of staff for personnel, discusses the quality of today's soldiers in his *Green Book* article. By any standard, the youngsters presenting themselves voluntarily for service in the Army, Navy, Air Force, Marine Corps and Coast Guard are the best ever.

In the Army, 91 percent are high school graduates and 63 percent test in the upper half of their peer group. This high quality has resulted in the lowest indiscipline rates in many years. The Army has enjoyed three consecutive years of excellent recruiting, and Congress has been most helpful in restoring the GI Bill and in sustaining the incentives necessary to compete in the national manpower market.

We know that the demographics will run against our recruiting goals at least through 1993 when the supply of those who are 17 to 21 years old reaches its lowest point. Meanwhile, the American economy is improving, thus complicating the recruiting equation.

In this milieu, it is vitally important to recognize the needs of NCOs who have the leadership skills and technical talents to perform excellently outside the Army. Should they leave the service, increased pressure would be brought to bear on the recruiting market.

The services must see to it that NCOs and young officers are paid competitive wages, paid the right amount for the moves the government orders them and their families to make and are provided with appropriate living and working conditions. At this writing, recruitments are on track, retention is up and losses due to expeditious and training discharges are down. That is good.

To the extent that we fail to provide the right salaries, the right housing, the right medical care and the right educational opportunities for family members and work opportunities for spouses, NCOs and young officers will find other opportunities to serve their country. Happily, retention of first termers and careerists has improved in 1985, but we must be watchful of the effects of changes to the retirement system. Already, we see a slight decline in the reenlistment rates of retirement-eligible soldiers.

How will retirement changes affect soldiers who have served 8 to 15 years? Time will tell. Meanwhile, the Army is committed to improving support to soldiers and their families.

There is another revolution at work as a result of the influx of dynamic young men and women into the Army. Caring, troop-wise NCOs and officers know that the opportunity exists for creating truly outstanding units.

As new M1s or Bradleys roll into a unit, a wave of cohesion and unity of purpose envelops that unit. Officers, NCOs and troops must all demonstrate technical competence in the new systems. That *technical competence* supports and strengthens the *confidence* of the unit—troopers and leaders alike.

Tough training at the NTC for both active and reserve units; unit rotations to the Sinai, to Honduras, or to Grafenwoehr and Hohenfels; larger exercises like Reforger and Team Spirit; and command post exercises in Hokkaido, Thailand and Australia have created a tempo of activity that has rarely been higher.

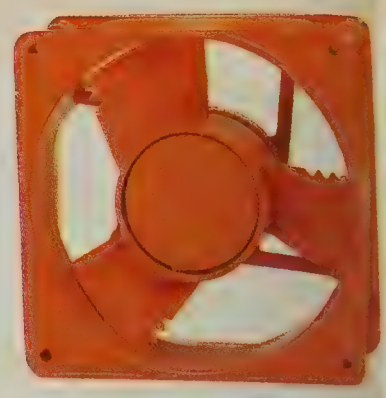
These great troops demand great training under great leadership and they are getting it.

There is also a revolution under way in the reserve forces. M60A3 tank modernization has been accelerated, the arrival of AH-1S Cobra attack helicopters is being advanced and 23,000 Reservists and Guardsmen—to include the entire National Guard 32nd Infantry Brigade (Mechanized) to "Reforger 86"—are to go overseas in 1986 for training. Guardsmen from ten states have been building roads in Central America.

Best of all, there are over 692,000 National Guardsmen and Army Reservists in units as of August 1985. National Guard, Army Reserve and active forces are enjoying their best-ever recruiting. While our policy is to hold active strength constant, there is no such limitation to service in the Army National Guard or Army Reserve. We encourage American youths who can meet our entry standards to serve proudly in our reserve components.

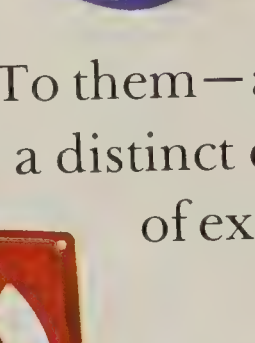
For all of these great troops, the Army is molding the technical and tactical competence of leaders at all levels. Many company, battalion and brigade commanders have had multiple rotations to the NTC. That alone is causing a revolution in tactical units. The precommand courses,

The Colors of Reliability

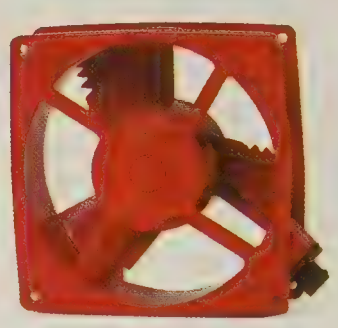


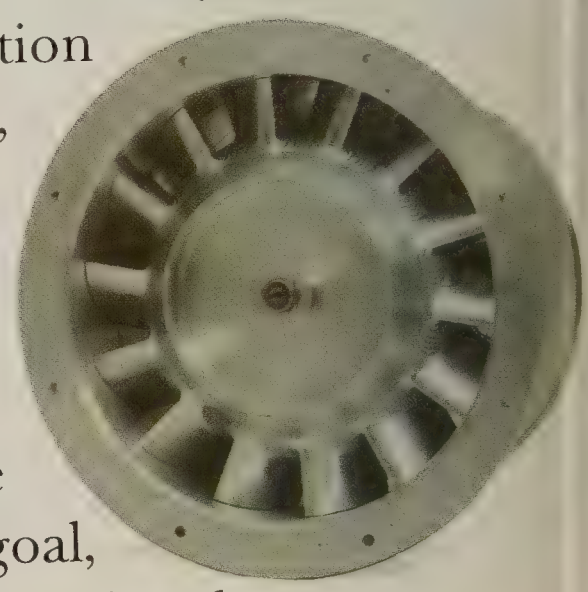


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the massive overhaul of our NCO
ol system are but a few of the cur-
training initiatives that are creating
ghtened leaders.

he real challenge lies in the magnifi-
troops with their magnificent new
pment, because the leadership cha-
e is not only top down, but also bot-
up. Talented, aspiring troops de-
d excellent leadership and expect the
lenges and responsibilities they will
. They also expect to lead. Time-in-
e criterion for promotion must give
to demonstrated competence. Revo-
nary? No. In war, the competent
e up. Can we afford less today? The
ergency deployment readiness exer-
—the EDRE mentality—suggests oth-
se. Smart troops, enlightened lead-
COHORT, new manning system, co-
on, the Regiment—the personnel rev-
on is moving!

s 1985 closes, substantial improve-
ts are under way in the Army. Great
ps are receiving great equipment.
pace of modernization of the close-
bat equipment can and should be ac-
ated. While limited funds restrict
process, we must, nevertheless, look
d to provide the equipment neces-
to realize the full promise of Air-
l Battle doctrine.

Attacking targets in the close-combat area where our potential adversaries vastly outnumber us can
eadly to the defender, no matter how
equipped, but the final battle must
ought and must be won in close
oat.

odern technology can provide a pow-
assist to the effectiveness of our
-combat forces through the selective
ption and destruction of our adver-
s' follow-on forces. The technology
o this is near at hand.

nsory devices such as the joint sur-
ince and target attack radar system
ARS), remotely piloted vehicles (RPVs)
laser designators, the Air Force pre-
n location strike system (PLSS), the TR-1 reconnaissance aircraft and others will now permit us to see well beyond the traditional 30-kilometer compass of the close-combat environment. Our potential adversaries' reinforcing forces must be discovered and targeted for disruption or destruction, either by firepower alone or in conjunction with reserve maneuver forces.

The historic Army-Air Force chief of staff memorandum of agreement discussed in the chief of staff's article elsewhere in this volume has had a profound influence on the materiel acquisition process. Specifically in the joint tactical missile system (JTACMS) undertaking, the Army is hard at work with the Air Force and industry to field one of the principal attack systems to go after the enemy's deep target structure.

That weapon, combined with Army tactical missiles and their "smart" munitions, like the terminally guided munition now under U.S.-allied research and development, hold the promise for destruction of enemy forces well beyond the nominal 30-kilometer range of currently fielded artillery weapons. These new weapons complement the Air Force's traditional capabilities for interdiction. The pace of development is slow: fund constrained, not technology constrained.

The enemy's reserves must not be immune from destruction; rather, they must



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endangered, slowed and destroyed be- they can bring their combat power ear on our forces. The technologies present, and research and develop- t is under way to provide deep-at- weapons.

The pace of development and field- ing of second-echelon attack sys- tems could be accelerated if all ld but grasp the added dimension of rrence these systems will generate. quate stocks of these nonnuclear smart pons can raise our nuclear threshold. e we field these destructive capabili- we will have the "right stuff" to t and win, even though outnumbered. olding second-echelon forces hostage firepower alone is not enough. Ma- ver forces must be in hand at the s level to orient on, disrupt and an- late enemy reserves before the enemy utes his plan of attack on his sched-

wo things must happen before this be brought about: first, the Army t be organized to provide CINCs with cient forces to allow corps to have ningful reserves; second, suitable doc- must be in place. With these in hand, corps commander will be able to syn- nize his intelligence assets, his fire- er and his maneuver reserves to de- y the enemy forces in detail.

appily, the revolution persists! The ning and Doctrine Command's crea- —the "Army of Excellence"—provides necessary force design framework to ort the corps commander. The new gns provide the mechanism for freeing mechanized maneuver forces to become reserves for the corps.

Now the doctrine—AirLand Battle doctrine together with the recently completed deep-operations adjunct—is in print. The AirLand Battle doctrine provides the catalyst for unleashing inherent American battlefield ingenuity. Along with their Air Force colleagues, corps commanders now have the operational concepts and soon will have the wherewithal to exercise the bold action required to win decisively.

Doctrine and force designs are in place; the arrival of the sensory means—JSTARS —and the firepower means—JTACMS, with terminally guided munitions—will complete the deep-operations suite. Accelerated developments in the fielding of these two fundamental systems will substantially change the war-fighting capabilities of the AirLand Battle team.

The technology is not esoteric; it is at hand. Resources are needed to field this equipment rapidly. The operational doctrine cannot be fully practiced unless the weaponry is available to execute it.

Finally, we need to ignite a new revolution. The best soldiers deserve the best equipment, and our most serious problem is confidence—the public's and our own—in our ability to provide that equipment. We must review our practices with the great American industrial base to assure the highest quality equipment for the best soldiers in the world.

We have adopted the "key operational capabilities" as a way of harnessing the research and development effort for the future. Approved in June by the chief of staff, the key operational capabilities for the Army between now and 2000 are:

- Command, control and communications.
- Reconnaissance, surveillance, target acquisition.
- Battlefield lethality.
- Battlefield sustainment.
- Soldier and unit performance enhancement.

Unlike the Big Five, the key operational capabilities are more than single systems. Instead, they are systems of systems, collections of hardware, software and concepts. They are a method of bringing order to the future, a way of focusing on a few concepts which bring Army objectives together dynamically.

They provide a means of packaging and prioritizing the necessary systems, programs and technologies to ensure that priority Army research, development and acquisition programs are supported in the annual program, planning, budgeting and execution process.

Within the framework of the key operational capabilities, the Army's highest priority must be command and control of our acquisition process. There is a highly respected principle of war in the Army lexicon called unity of command. Its formal basis is the Field Service Regulation of 1913, but its true basis is the rule of organizational simplicity.

Audit responsibilities, preliminary cost-estimating procedures and plant representation are not uniformly harnessed under service procurement authority. Responsibility and accountability can be substantially improved by simplicity and



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'As new M1s . . . roll into a unit, a wave of cohesion and unity of purpose envelops that unit.'

erence to tried and true principles of
y of command.
n order to work well with industry,
must know enough to give them good
ction and we must be confident in
anding that our standards be met.
must drive the requirements process
evolutionary ways. Our requirements
ements must be simple and complete
include the soldier. This is not im-
sible.
recently approved requirement state-
it was three lines long and described
man-portable antitank weapon with
probability of kill of .5 at 1,300 me-
in obscurant conditions with 'man in
loop.' " Leaving man out of the de-
process until too late has cost us
ney for years and given us weapons
embarrass us when we actually field
n. "Man in the loop" in the develop-
it process means good equipment in
hands of troopers in the field.
We must reduce operations and support (O&S) costs. Inherent in this task is the requirement to lay out the costs for each system by total support costs (including personnel, training, spares, depot maintenance and the like) and to identify the aspects of reliability, maintainability and durability that most affect support costs.

The goal is significant reductions in equipment downtime, maintenance support structure, training requirements and dollar costs. Additionally, a predictive failure capability is essential if we are to ensure the battlefield staying power and safety features that our soldiers deserve; therefore, we must look for ways to embed sensing devices in our equipment to predict maintenance failure before it happens.

Other approaches to business have been revised. To reduce O&S costs at the front end of the development process and to prevent, on a routine basis, their escalation, we are demanding consideration of O&S when contracting. When a contractor or project manager comes in with a product improvement proposal, 25 percent of the money invested must go to O&S cost reduction.

We have been funding independent research and development to industry on a business base basis, but we must change to a system rewarding return on investment. The thrust is to do business in a businesslike way and to provide the world's best Army with the world's best equipment.

This past year we have turned the corner on the future. We are fielding the Big Five weapons systems for the close-combat area. We have moved forward on systems capable of fighting in the main battle area and beyond. It is essential to speed the pace of this modernization and to bring in the deep-attack systems rapidly. There is a major payoff in raising the nuclear threshold if we do so.

We activated our first light infantry division, and we produced the doctrine for the AirLand Battle, including deep operations. We are revising our practices with industry to increase efficiency and credibility.

Our soldiers and leaders, both active and reserve, are, at once, serving and creating the best Army in the world. The initiatives of the last decade—the efforts which got us to this healthy state—are being brought forward toward the ultimate, constant objective of winning on the battlefields of the future.

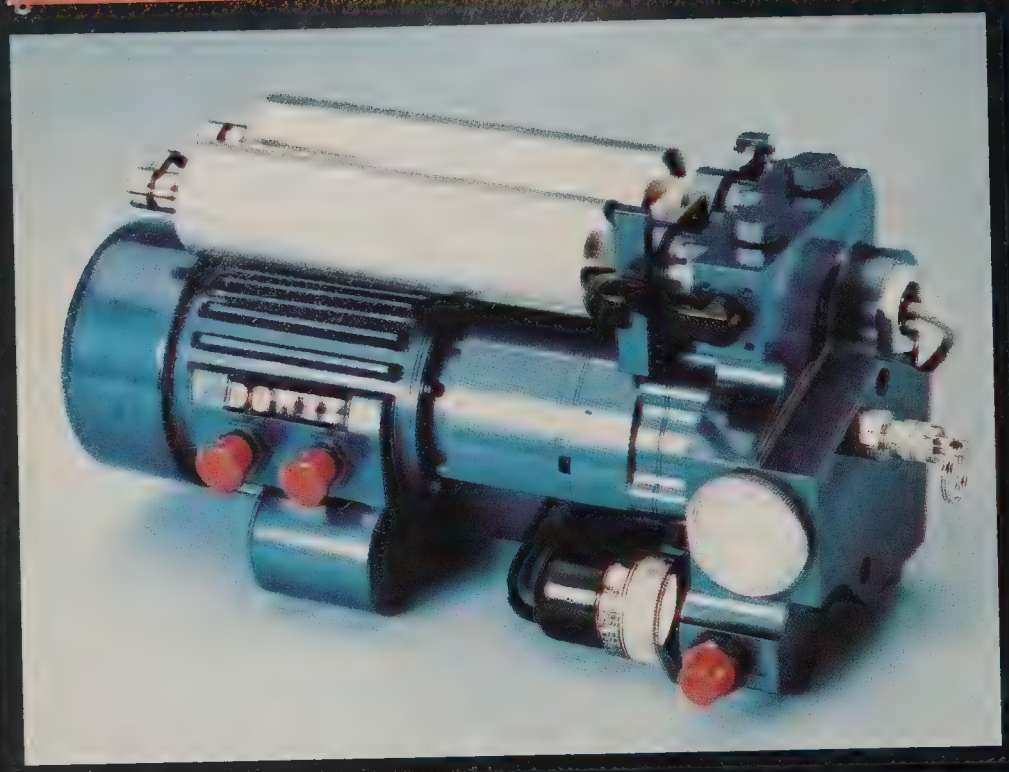
We know that future major conflict will center around land forces and will be marked by the proliferation of advanced technologies which will increase the width and depth of the battlefield and make it even more lethal. The early phases of the conflict will be critical in controlling escalation. There may not be time to "equip or train up," and the Army must be prepared to conduct "come-as-you-are" operations.

The challenge is clear and imposing. Only by maintaining the revolutionary spirit born in the last decade and nurtured by innovation, candor and hard work can we expect to fulfill the promise of the future.

Educating our leaders, modernizing our materiel, training hard—these are the central tasks for preparation for war. Preparedness is central to deterrence. The 168 battle streamers on the Army flag attest to readiness throughout the history of the Republic. When we were needed, we were there! In the future—when we are needed, we will be there!

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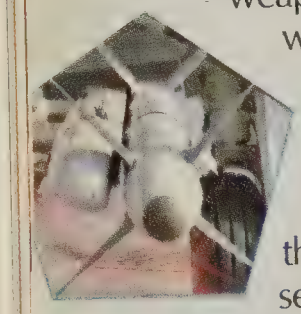
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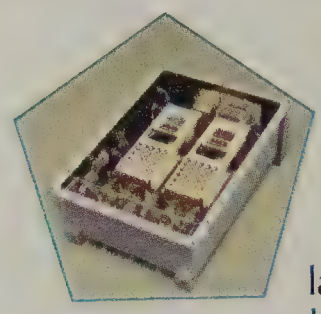
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Electrical Power - Microwatts to Megawatts

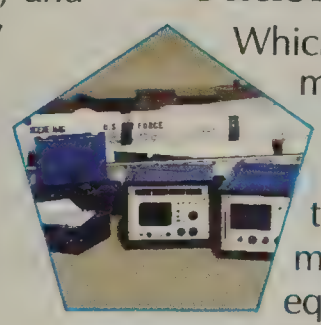
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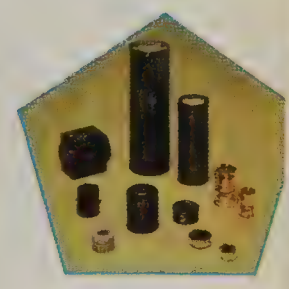
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NCOs Are the 'Vital Link In the Chain of Command'

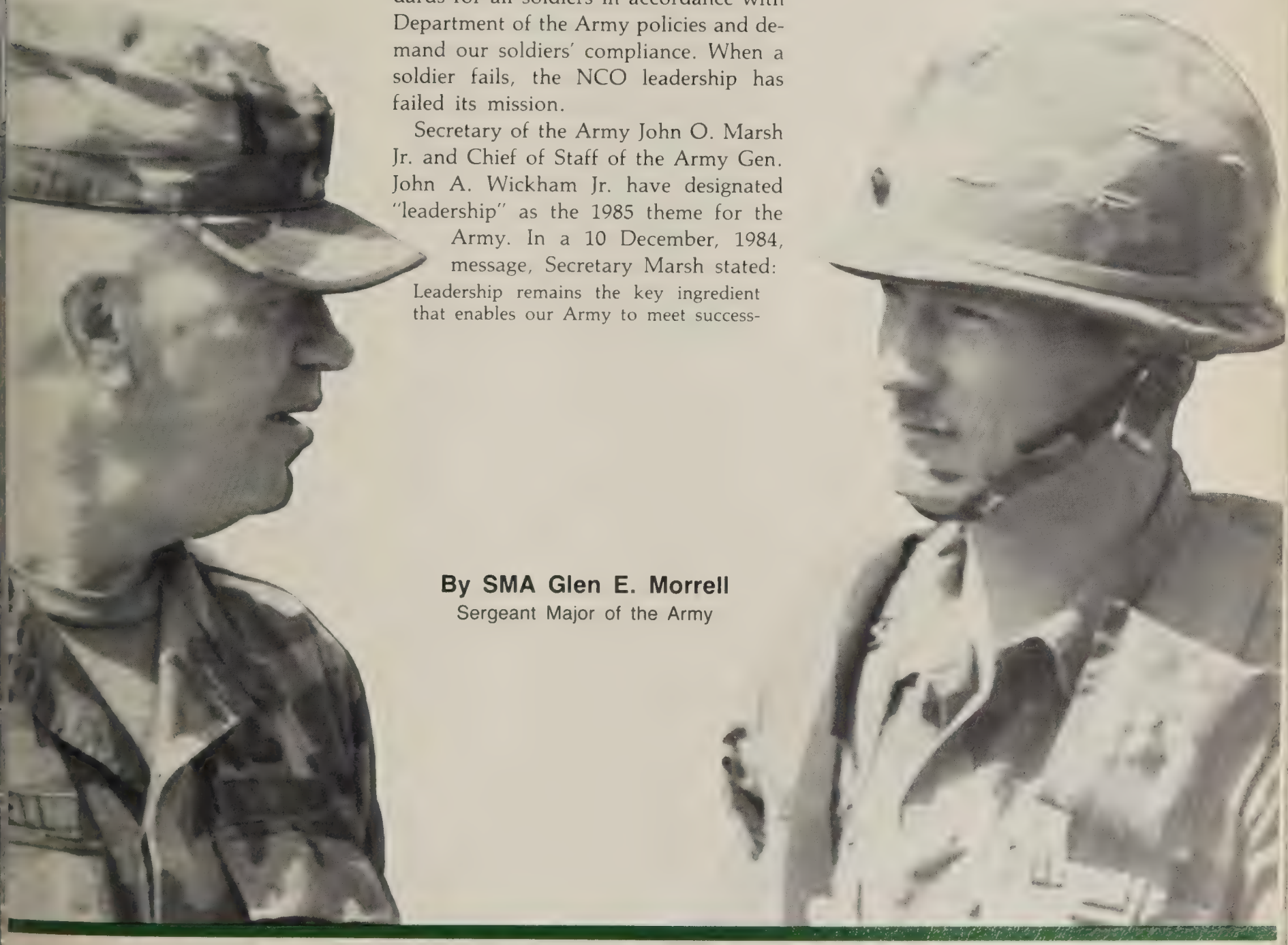
The main business of the noncommissioned officer corps is training, including the capacity to recreate itself, as the teaching and leadership skills that make small units work are passed from one generation to the next.

Our Army has been organized around a strong, dedicated and technically capable noncommissioned officer corps. The noncommissioned officer (NCO) takes pride in being a leader and ensuring that our soldiers are trained to high standards. Training, as a constituent of leadership, is the most important thing noncommissioned officers do in the Army. As noncommissioned officers, we must make sure the Army is ready to go to war. For us, it means expending much effort in fostering competent, humane leadership while encouraging meaningful training.

The noncommissioned officer is the principal trainer, as well as role model, for all enlisted ranks. We set the standards for all soldiers in accordance with Department of the Army policies and demand our soldiers' compliance. When a soldier fails, the NCO leadership has failed its mission.

Secretary of the Army John O. Marsh Jr. and Chief of Staff of the Army Gen. John A. Wickham Jr. have designated "leadership" as the 1985 theme for the Army. In a 10 December, 1984, message, Secretary Marsh stated:

> Leadership remains the key ingredient that enables our Army to meet successfully the challenges we face. Leadership is vital for melding Army members' aspirations, skills and capabilities into an organization able to deter, fight and win in defense of our national interest. No matter what the leader's rank or organizational level, each leader has the same obligation. That obligation is to inspire and develop excellence in individuals and organizations; train members toward pro-



By SMA Glen E. Morrell
Sergeant Major of the Army

fessional competency; instill members with the spirit to win; see to their needs and well-being; and set standards that will be emulated by those they lead. The bond between the leader, the led, and the organization must produce leaders who are grounded in the fundamentals, yet responsive to new ideas. We call on all of you to make the theme of leadership a reality in the Total Army.

Based on this challenge, I want to focus on the noncommissioned officer corps and their responsibilities concerning leadership, training and professionalism. Many people do not fully understand NCO leadership. They think that leadership is a trait only practiced by a few. Most of the articles written on leadership are by officers, and this could be part of the reason why many believe leadership belongs to the officer corps. That belief is simply erroneous.

The well-trained noncommissioned officer is, indeed, the backbone of the Army. The purpose of leadership is to accomplish the mission—to get the job done. This challenge to get the job accomplished is the same whether a soldier is a squad leader, a leader in a staff assignment or a company first sergeant. This challenge also applies whether the people being led are active-duty soldiers, Army Reservists, National Guardsmen, civilians or retirees.

Notwithstanding the kind of soldier we are working with, one principle is constant: good leadership takes time to develop. Like other skills, those of the leader are fragile; they can be lost unless practiced all the time. We have all heard many definitions of leadership over the years but what may be effective for one may not work for others. The theory of leadership can be taught, but requires constant practice. We can never stop working on being good leaders. In the Army, we lead by working with people. As former Sergeant Major of the Army William A. Connelly said:

> The most precious asset we have in the U.S. Army is the soldier; the most scarce asset is time. The proper use of the soldier's time, spent learning how to do and practicing his job, is the only way to give our soldiers what they deserve.



The sergeant major of the Army talks with soldiers in the field mess area of the 1st Infantry Division's 121st Signal Battalion, while observing field exercises at Ft. Riley, Kan.

Everyone has his own leadership style. We do not lead squads, sections or platoons. We lead the soldiers who are members of these units. This truism holds regardless of the type of unit or its mission. During a recent sergeants major luncheon, Army Chief of Staff Gen. John A. Wickham Jr. said:

> If we truly care about soldiers, we must care about quality training that's tough and also safe. Good training means strong leadership, with you and your fellow noncommissioned officers fully responsible for individual training. You are responsible for the training of soldiers in their individual skills. No one else! You! If they are not trained well, you are the responsible individual and you will suffer the consequences on the battlefield, in the conscience, if not in the vision.

A sergeant is a leader. The designation "noncommissioned officer" sets the NCO apart from other enlisted soldiers. Noncommissioned officers have always been charged to train, maintain and care for soldiers and their equipment. Soldiers expect their leaders to know what is correct and to do what is correct. They expect the noncommissioned officer to be technically proficient, up front and honest with them. The fact that a person wearing sergeant's stripes means that chain of command has chosen that dier to be a leader.

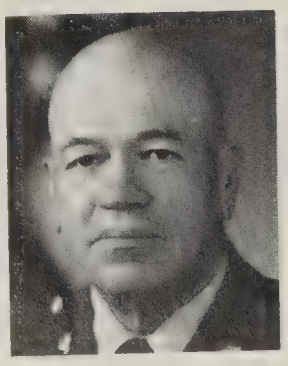
We do not just automatically beco good leaders when we put on a unif or sew on that third chevron, howe Let there be no misunderstanding: n commissioned officers make noncom sioned officers! Remember the say "train your own replacement." It is true today.

The noncommissioned officers' ed tion system (NCOES) does not pro noncommissioned officers. It will not was it ever intended to do so. The OES builds upon the training condu by the unit to further the developme that noncommissioned officer. Lea are made, not born.

Identifying good soldiers—pote leaders—and turning them into good commissioned officers is a complex cess. The bottom line is simple, how weed out the poor performers, teach right soldiers the right things and re mend the best soldiers for promotion retention.

The only way to prepare good sol to become noncommissioned offic to place them in leadership position increase their responsibility accordi their ability. This process takes tim patience. We must teach the new commissioned officer how to teach o

From the first-line sergeant all the



SGT. MAJ. OF THE ARMY GLEN E. MORRELL, who has served 30 years, became the seventh sergeant major of the Army in July 1983, after having served as the command sergeant major of U.S. Army Forces Command (FORSCOM). He has served two tours each in Europe and Panama, as well as three tours in Vietnam with the 5th Special Forces Group. At the age of 41, he volunteered for Ranger training, finishing first in his class, and is a graduate of the U.S. Army Sergeants Major Academy. Before taking the top enlisted position at FORSCOM, SMA Morrell was the sergeant major of the U.S. Army Recruiting Command.



Visiting soldiers during field exercises at Ft. Riley, Kan., SMA Morrell talks with Sp.4 Byron Mayo, a supply specialist with Headquarters and Headquarters Company, 121st Signal Battalion.

SMA Morrell visits the main field training site of the 1st Infantry Division (Mechanized), Ft. Riley, Kan., in the company of Sgt. Maj. Robert Robbins (left) *of division headquarters and CSM Jerry A. Bradley* (right), *the division command sergeant major.*



the chain, the noncommissioned offi- need to progress in their jobs as ners and small-unit leaders. The only noncommissioned officers can reach r full potential is through practice and -development. Officers should provide environment and opportunity, and the commissioned officers should take care he training, counseling and coaching. standards should be reasonable and uld include appearance, conduct, tech- l ability required and physical fitness. Ve have come a long way in the past years in developing a strong noncom- sioned officer corps. The training re- ed in the NCOES is helping us do t. The process by which soldiers are cted for attendance at NCOES schools, vever, needs continuous emphasis. If ction procedures are not properly ervised, quotas will not be filled and best soldiers will not attend.

Ve must not send soldiers who are ply available. That hurts the soldier the Army. If we send those soldiers are simply available, they will be moted and we risk losing the better liers. If the system works properly, if right soldier is selected and sent to right school at the proper time, the lt will be better noncommissioned of- rs in units throughout the Army. Our liers benefit from good training pro- d by top-notch noncommissioned of- rs, and the noncommissioned officer os continues to get stronger.

he learning process never ends. We ain students of leadership and train- no matter what our grades or levels xperience. As we nurture our junior lers, we grow ourselves. To teach, the ler must have knowledge. The non-commissioned officer leaders must know themselves, their subjects, their soldiers and their soldier's needs. Furthermore, they must be capable of inspiring young leaders with their knowledge. That cannot be done by words alone; it must be done by personal examples of ethical and professional excellence.

The noncommissioned officers must set high but realistic standards and enforce them, in addition to personally upholding those standards. You have heard it said before, but to do that, the noncommissioned officer must be tough, yet fair. General of the Army Omar N. Bradley once said:

> The American soldier is a proud one and he demands professional competence in his leaders. In battle he wants to know that the job is going to be done right, with no unnecessary casualties. The noncommissioned officer wearing the chevron is supposed to be the best soldier in the platoon and he is supposed to know how to perform all the duties expected of him. The American soldier expects his sergeant to be able to teach him how to do his job.

A few years ago, Gen. Paul F. Gorman challenged the members of an audience he was addressing to list the three most important steps the Army should take to prepare for war. After a moment, he offered his own list:

1. Train the NCO.
2. Train the NCO.
3. Train the NCO.

I could not agree more, but I would modify that list to read: train the noncommissioned officers but then let them, no, *demand* that they do their jobs. Use the noncommissioned officers to the extent that you have trained them.

Both officers and noncommissioned officers who understand these principles are in short supply. Today's leaders need to recognize how essential the well-trained noncommissioned officers will be to win the next war. AirLand Battle doctrine places a premium on the abilities, judgment and professionalism of small-unit leaders. That small-unit leader is the professional noncommissioned officer. We have no option but to capitalize on the full potential of all noncommissioned officers.

Noncommissioned officers are the vital link in the chain of command between seniors and subordinates. They are in key positions to give timely, personal leadership to soldiers. Most soldiers want to increase their knowledge and learn new skills. They enjoy the pride and sense of accomplishment that go with meeting tough challenges successfully. Soldiers do not want to waste time. They want their training to be meaningful. It can be and should be if the leadership is competent and trusts those charged with mission accomplishment.

Gen. Bruce C. Clarke expressed it well when he said, "There never has been a great Army without a good noncommissioned officer corps."

As stated by former Sergeant Major of the Army William G. Bainbridge, now U.S. Army, retired, in a *Green Book* article in 1977, "Noncommissioned officers run the Army so officers have the time to command it."

Let this be our challenge for the "Year of Leadership": train our noncommissioned officer corps fully and ensure that we develop and use the full potential of every noncommissioned officer.

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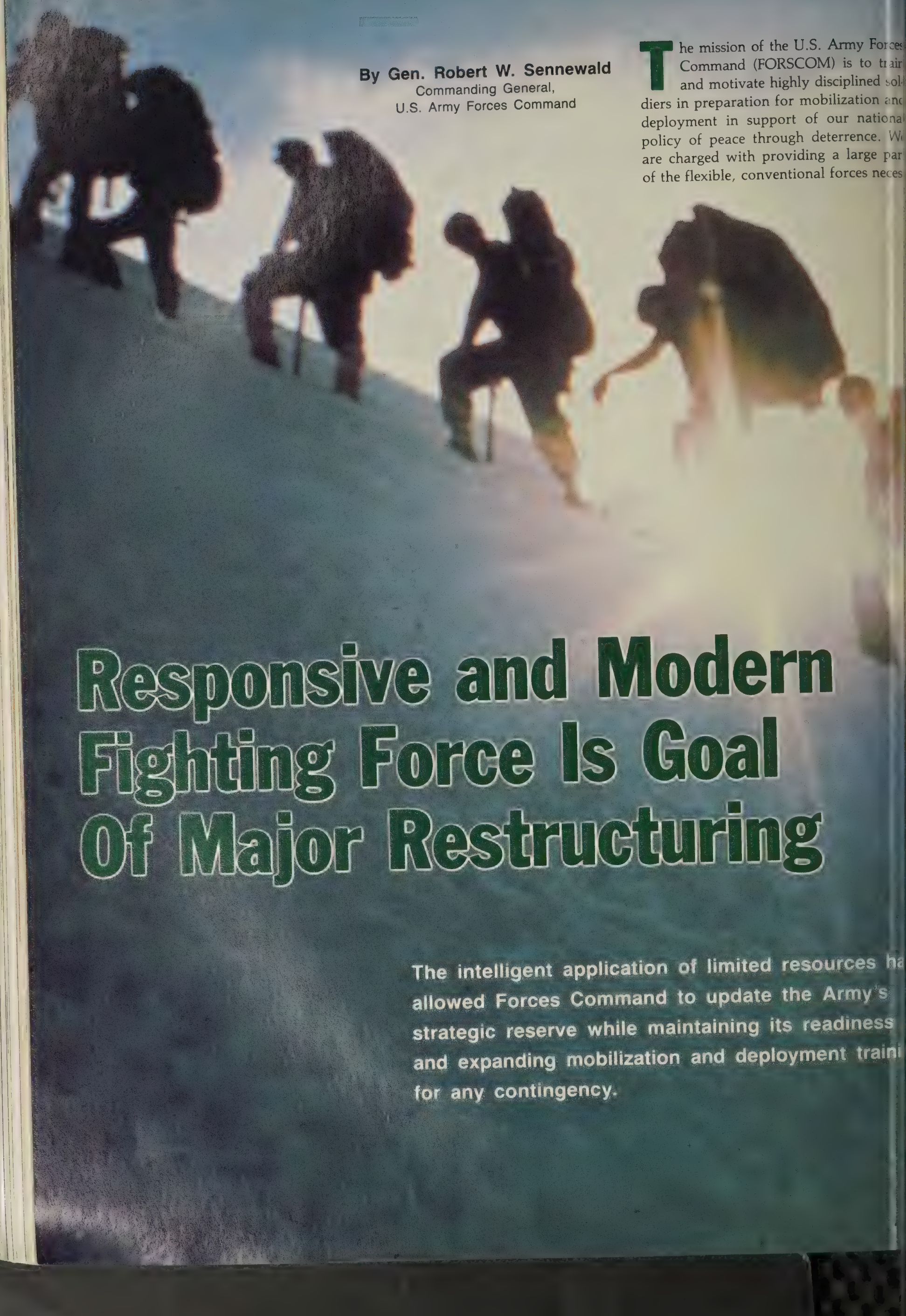
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Responsive and Modern Fighting Force Is Goal Of Major Restructuring

By Gen. Robert W. Sennewald
Commanding General,
U.S. Army Forces Command

The mission of the U.S. Army Forces Command (FORSCOM) is to train and motivate highly disciplined soldiers in preparation for mobilization and deployment in support of our national policy of peace through deterrence. We are charged with providing a large part of the flexible, conventional forces neces

The intelligent application of limited resources ha allowed Forces Command to update the Army's strategic reserve while maintaining its readiness and expanding mobilization and deployment traini for any contingency.

to deter, or overcome, minor crises low-intensity conflicts as well as to t full-scale wars.

lthough our Army is stronger and er equipped today to perform its mis- than at any time in recent history, are at a critical juncture in achieving necessary balance of active, reserve civilian personnel resources to meet wide range of possible contingencies. continue the progress made in recent s toward the "Army of Excellence" E), FORSCOM continues developing ady, flexible, tactically sound and nologically competent land force. De- pment of this force is our primary at every level of command and the ctive of every training day.

o meet this goal, FORSCOM is en- ed with substantial resources. Our annual expenditures amount to over $3.8 billion to lead, maintain, train and care for soldiers. Training is conducted on the five million acres of land that comprise our 20 major and 29 subinstallations, and FORSCOM commands 6 numbered Army headquarters, 3 corps, 11 divisions, 8 separate brigade-sized elements and over 700 smaller units of the active Army.

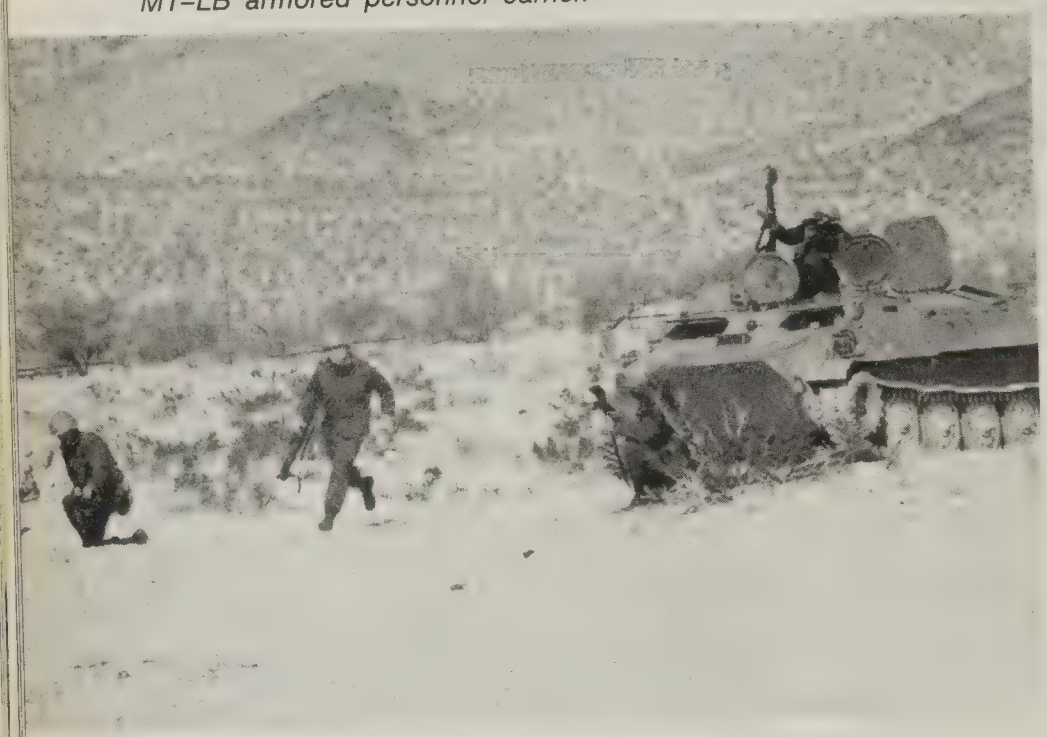
FORSCOM also commands 12 training divisions and 27 separate brigade-sized elements of the Army Reserve and supervises the training of the 9 divisions, 22 brigades and other units of the 54 state and territorial Army National Guards. When fully mobilized, we are a total force manned by approximately 275,000 active component (AC) and 700,000 reserve components (RC) soldiers and 45,000 civilian employees. Add to these our thousands of weapons, vehicles, aircraft and other pieces of equipment that are our tools of war, and it becomes clear that both effective leadership and intensive management are necessary to focus our resources on the broad spectrum of threats.

Recent world events have strongly affected FORSCOM. Soviet aggressiveness and power projection capabilities, combined with the proliferation of small Third World forces and terrorist groups, are rapidly increasing. Our ability to confront both low- and high-intensity conflicts is needed more than ever, and implementation of the Army of Excellence force structuring program, designed to meet this threat spectrum, has moved into high gear.

FORSCOM has made great strides in AOE initiatives, but their impact can best be understood in a historical perspective. Before 1983, the Army had conducted the "Army 90" study that set the combat unit design wheels in motion toward a divisional structure called "Division 86." While that name is normally associated with heavy mechanized infantry and armored divisions, there were also corre-

Mountain training is one of the specialties on the agenda of the Army's light infantry and special operations forces.

Units doing the course at FORSCOM's National Training Center, Ft. Irwin, Calif., confront appropriately equipped opponents trained in Soviet-style tactics: 'Opposition Force' troops exit a Soviet MT–LB armored personnel carrier.



Small-unit leaders of the 7th Infantry Division conferring during Exercise 'Team Spirit 85.'



sponding designs for infantry, airborne and air assault divisions.

During 1983, it became apparent that the Division 86 designs could not be completely supported with either manpower or equipment. At the same time, it was recognized that the Army's forces were not properly balanced to counter the impact of the broadening spectrum of threats mentioned previously.

In 1983, to correct the too-heavy, too-large posture of our divisions, the Training and Doctrine Command (TRADOC) began a major redesign task that continues today. The end result will be a newly structured, modernized, more responsive, combat-oriented fighting force that can meet the probabilities and types of conflict. It is this new design that has been designated the AOE.

For us, AOE has meant changes for virtually every type of unit through an orderly program that allows transition of units from one design to another without sacrificing readiness or an ability to go to war on short notice. In general, divisions are being reduced in size, while corps are being augmented with a variety of units which will be available on a flexible basis where and when needed.

For FORSCOM's mechanized and armored divisions, AOE means reducing end strengths from Division 86 projections of 20,000 troops to approximately 17,000. At the same time, modernized equipment and restructuring initiatives are increasing mobility, firepower and leader-to-led ratios within the land force.

Typical actions include increases in the number of maneuver companies and their primary killing weapons and a reorganization of the combat service support base. The latter now includes main and forward support battalions that contain a variety of maintenance, medical and supply support that was originally in separate ganizations. This redesign also must m with ongoing efforts that will produce right tactics to take advantage of new ganizational structure and new weap

By the end of fiscal 1985, a large of each of FORSCOM's six heavy sions was scheduled to have compl reorganization conforming to the design. Command and control headq ters, maneuver battalions and a siz part of the support and service sup base are in the new configuration, transition of air defense artillery, artillery and aviation units will occur ing fiscal 1986 to 1989.

The changes for light forces in F COM have been even more dynamic 7th Infantry Division is completi fiscal 1985 reorganization that will it to a reduced end strength of 1 personnel. The design of this new infantry division, which can be dep rapidly in 500 or fewer sorties b Force C–141B transport aircraft, w certified during fiscal 1986 by exe up through division level.

The activation of two new infant visions, designed to increase the A capability to react quickly aroun world, was announced a little more year ago. Headquarters of the 10th tain Division (Light Infantry) wa vated in December 1984 at Ft. N.Y. Divisional base units were t been activated at Ft. Drum by the fiscal 1985, and the two active Arm infantry brigades will come on lin



GEN. ROBERT W. SENNEWALD was appointed commanding general, U.S. Army Forces Command, in June 1984, following his assignment as commander in chief, United Nations Command, ROK/U.S. Combined Forces Command, U.S. Forces, Korea, and Eighth U.S. Army. Previously, he was deputy commander in chief and chief of staff of the Pacific Command. A distinguished military graduate of ROTC, he entered the service in 1951 and holds a bachelor's degree from Iowa State University. He graduated from the National War College and earned a master's degree from George Washington University. He has held various troop commands, including combat in Korea and in Vietnam, where he commanded an artillery battalion in the 1st Infantry Division. Gen. Sennewald has held a number of key staff positions in the organization of the Joint Chiefs of Staff and the Department of the Army.



An M60 machine gunner of the 193rd Infantry Brigade (Panama) checks the zero.

fiscal 1986 at Ft. Drum and Ft. Benng, Ga.

The division's third brigade will be a "roundout" unit with resources provided the 27th Brigade, 42nd Infantry Divi-n, of the New York National Guard. brigade at Ft. Benning is programmed relocate to Ft. Drum in fiscal 1989, n facilities to support it become avail-.

The second new division, the 6th Inry Division (Light), will be organized ng forces of the 172nd Infantry Bri-e, currently in Alaska, as a nucleus. division headquarters and one bri-e will activate this fiscal year, and a nd brigade and division base units come on board during fiscal 1987–89. 6th will be tailored as a theater de-ie force and will have support battal-s configured for the Alaskan area mis-n. It will also have a reserve compots roundout infantry brigade. The Army Reserve's Minnesota-based 205th Infantry Brigade has been designated for that role.

Still another light infantry resource will come from the 193rd Brigade in Panama, which restructured to the light design in fiscal 1985. The brigade has two light battalions and support tailored from nonbrigade assets that were in the geographical area.

The reorganization and down-sizing of the 101st Airborne Division (Air Assault) and the 82nd Airborne Division are also part of the AOE initiative. Reduced to approximately 15,500 spaces, the 101st will undergo substantial change in fiscal 1986. The major innovation will be the addition of an antitank company to the current air assault battalions, where pure infantry assets are being reduced.

The 82nd Airborne Division will reach a new design in fiscal 1987 at approximately 13,100 spaces. While most of the

An antiarmor team fires an M72 rocket during exercises at FORSCOM's National Training Center, Ft. Irwin, Calif.



unit tables of organization and equipment (TOE) are still being developed by TRADOC, many designs will be similar to those of the air assault division units.

The 9th Infantry Division (Motorized) will continue its transition to a high-technology design during fiscal 1986–87 and its ultimate strength will be approximately 13,500. Major issues still requiring resolution include the final designs of the assault-gun system and fast-attack vehicle that will form the nucleus of the division's combat power.

AOE force structure plans are by no means restricted to the AC, however, which today is heavily dependent on its RC partners. Currently, 48 percent of the Army's combat units and 70 percent of its combat support and combat service support (CS/CSS) units are in the RC.

For example, Third U.S. Army, with its vital Southwest Asia contingency mission, has almost 60 percent of its nondivisional "Capstone"-aligned force composed of National Guard and Army Reserve units. For AOE restructuring to make sense and work, RC units must undergo structural changes similar to those of their active counterparts. This is particularly critical for the corps RC combat support and combat service support forces, since they provide the bulk of this type of support.

In further efforts to ensure that RC force readiness keeps pace with the active Army, FORSCOM has continued the implementation of Army initiatives in the



A trooper of the Utah Army National Guard's 19th Special Forces Group takes a water break during a winter field exercise.

Capstone, roundout and reserve components CSS alignment programs. Under Capstone, the majority of FORSCOM RC units are now planning and training for specific wartime missions in European and other theater contingency plans.

Capstone identifies RC unit mobilization alignment, parent and subordinate command structures, time-phasing into the theater, and command and control structure. Major commands, such as Third Army, would become the wartime employers of this force. They provide mission guidance to subordinate wartime-aligned units so they can develop training programs which support their wartime priority planning.

Roundout enhances the RC training program as Army Reserve and Army National Guard units become parts of stateside active divisions for readiness training and actual mobilization. Our goal in this effort is to help overcome the limited training time available to the RC, while providing objective annual training evaluations and other forms of training assistance throughout the year.

Many of the restructuring actions I have described are mandated by modernization. While research and development are continuous, the pace of actual modernization varies from system to system; however, during this decade, over 200 major systems will be integrated into the total force. This is one of the principal reasons why we are not simply substituting new models for older ones: we are fielding new organizations as well.

When one considers the myriad details that must be coordinated to execute such a program, the challenges become apparent. For example, in the case of our new attack helicopter, the Apache, funds must be made available, manuals written, test equipment designed, doctrine developed, soldiers recruited and trained and new procedures formulated to capitalize on the characteristics of the weapons system. All these things and more must be accomplished simultaneously.

In essence, a whole new organization is created, trained and put into operation at one time in one place. We call this "total package unit fielding," or "full-unit fielding" for short.

The restructuring of FORSCOM units is a formidable task that requires a coordinated supporting effort from many of the major commands under Headquarters, Department of the Army (HQDA) to complete. All of the requirements, to include force design, personnel, equipment, training strategy and literature, facilities, and money, must be synchronized with effective dates for reorganizations.

Adjustments to funding in the category "military construction, Army" are also frequently needed so that all related support will be compatible with every part of the program. Only when compatibility is achieved can the redesign effort produce an efficient program and increase the combat capability and readiness of the force.

Restructuring for the AOE, although vital, is not enough. The updated force must have the proper resources. Therefore, the AOE modernization priorities continue to follow the "first to fight, first to be equipped" principle that applies to FORSCOM units of both components.

As new missions are implemented and as new equipment is fielded, equipment redistribution programs become a major challenge. Replacing and upgrading of old equipment have had an impact on both the losing and gaining units in terms of dollars, storage, maintenance backlog, training and management.

FORSCOM is solving the resulting problems through initiatives like the dedicat procurement program (DPP), minimu essential equipment for training (MEE RC transition to modernization and gional maintenance training sites (RMT

The purpose of the DPP is to fill c ical equipment shortages for early-depl ing Army Reserve units. Funds for program are "fenced" by Congress this purpose only. The appropriation fiscal 1985 was $150 million, a signific proportional increase over the $198 lion total appropriated since the first funding in fiscal 1981.

MEET was identified to provide priority RC units with the minimum q tity of an item needed to develop maintain trained personnel. An expan to include more units and equipme currently under way.

Another means by which we are grading the RC is "combat service port alignment." Because the major tion of CSS units are in the RC, FC COM developed a plan for aligning, e ping and training nondivisional ma nance companies for their wartime sions. The plan was originally adopt mid-1983, and consists of four acti

- Aligning RC support units with bat units based on Capstone guide
- Documenting units with pr MTOEs (modification tables of orga tion and equipment).
- Equipping units with essential and test equipment.
- Training individual units cons with priorities of modernized system tribution.

Of the 133 nondivisional RC m

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Armored vehicles under way on the desert floor at the National Training Center, Ft. Irwin, Calif.

nance companies, 51 are being aligned to support 15 modernized pacing equipment systems in the field. Thirty-eight additional RC units (16 National Guard and 22 Army Reserve) have been authorized tools and test equipment, plus the necessary personnel skill requirements, to support eight of these systems.

Coupled with this is an ongoing effort to document the equipment and personnel skills necessary to support the remaining seven pacing systems for 51 essential force units.

To further support the force modernization program, FORSCOM has presented to HQDA a total requirement of $450 million to equip all 133 RC nondivisional maintenance units with the tools and test equipment needed to maintain the 15 modernized systems already, or soon to be, fielded.

Because providing resources for the AOE is very expensive, the process is subject to rigid constraints. Waste is unacceptable. In May 1984, FORSCOM formally declared war on waste and ordered major commanders to get personally involved in the detection and disposition of excess parts and equipment.

Their mandate included the determination of basic causes for excess accumulations and taking corrective actions to prevent waste and abuse in the logistics system. The efficient, effective management of resources not only upholds the trust placed in us as leaders and contributes to an improved perception of the Army, but is a key tool building and maintaining readiness.

Like equipment, our installations resources that require efficiency initiati to reduce the cost and manpower supp of base operations. One such initiativ the peer comparison test, developed i contract between the deputy assistant retary of defense for installations and General Research Corporation.

FORSCOM has agreed to particip in a three-year test which involves m tenance and supply functions; civi personnel functions; housing, maintena and repair functions; and others. In lations will be compared in certain areas and the results shared among posts to aid in the improvement of ministrative and logistics operations

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A CH–47D medium-lift helicopter settles onto a snow-covered field during movement of an M198 155-mm howitzer battery.

Also on the logistics side of the house, FORSCOM has developed and implemented an advanced data processing system down to company level to improve the productivity of our logistics soldiers. The automated tactical organization paperless service support system (TACOPS), used both in garrison and the field, was developed by the 24th Infantry Division (Mechanized) for unit-level supply, maintenance and transportation operations.

TACOPS has been adopted for use Army-wide and renamed the unit-level logistics system (ULLS). The maintenance activity management system, which automates direct-support and general-support level maintenance shop operations, has been fielded to 20 maintenance units and is designated for 56 others.

Long before ULLS, FORSCOM implemented a program to improve the return rate of depot-repairable repair parts and assemblies to achieve economy through repair, rather than replacement, of unserviceable items. Continuous emphasis in this area has resulted in a steady climb in our return rate from 41 percent in September 1982 to 80 percent in April 1985. After achieving the initial objective of 75 percent in September 1983, FORSCOM raised the goal to 85 percent.

In another effort to provide commanders and other top managers with a comprehensive and uniform method for managing resources, FORSCOM has begun developing a command management system (CMS). The CMS will enhance decision making within the command by fully integrating the planning, programming, budgeting, execution and evaluation processes.

The CMS subsystem employed at the installation level is the standard installation management system (SIMS), which was fielded in March 1984. It provides basic policies and techniques for managing installations, identifies common installation functions and prescribes functional performance standards.

As a complement to the SIMS, installations will develop and publish installation five-year plans.

These will encompass all installation functional areas, with emphasis on the actions which must be taken to deal effectively with future missions, equipment and structuring actions.

FORSCOM has taken the lead in programs that ensure maximum utilization of all resources. Included in these initiatives are commercial activities, Army performance-oriented reviews and standards, value engineering, quality circles and defense regional interservice support. Historically, these have operated as individual programs with their own training, reporting arrangements and scheduling. This separation often resulted in conflicting demands for scarce resources.

FORSCOM therefore has developed a system designed to integrate these programs and to minimize their adverse impact on installations. In fiscal 1984, a separate staff division (aptly named the productivity improvement division) was created to implement this system. Its charter is to strive to have only one comprehensive study of each functional area at any installation. This study will meet the requirements and needs of individu programs, while reducing the impact the functions being studied.

An additional benefit of the system that integration has dramatically reduc the time required to complete efficier studies under the programs. FORSCC predicts that productivity in the efficier programs will increase by a factor of fo to five and that savings will be reali months sooner.

The bottom line will be the achie ment of the savings of thousands of spa and millions of dollars over the next t to three years.

In developing the productivity impro ment division, FORSCOM created a n trix organization which includes the n tidisciplined skills required to perfo management studies. This organizatio striving to determine the state-of-the technology which will significantly incr the productivity of base operations s port functions. The ideas developed be exported throughout the Army.

Through such efficiency progra FORSCOM is obtaining reso savings which have the net e of reducing the government cost for operations, thereby providing more sources for our combat units. Ultima of course, all of these initiatives are signed to support the soldier, to mak job easier and to make him or her m effective. That is most important, bec FORSCOM *is* people.

Manning the equipment of the mo ized land force is perhaps the best-c fied, best-trained and best-disciplinec dier the Army has ever known. more than 90 percent of the Army's recruits possessing high school diplc we have the kind of new soldier wh readily accept additional educatior training to proficiently man the than 400 new war-fighting systems rently being developed and fielded w FORSCOM.

Therefore, to continue attracting



Engineer fire fighters train in full protective gear.

lining good soldiers, in addition to eloping them into the strong leaders omorrow, our training programs must mentally and physically challenging. ensure that, we are working on nuous "people" objectives, ranging from ivation through state-of-the-art school- to "quality of life." Nothing is more ortant to a soldier than the feeling of nging, and we are promoting that ng in many ways.

or example, reliance on the RC as an gral part of the total land force has sed us to place greater emphasis on personnel programs and policies. Our tinued efforts to increase and properly ze the full-time unit support force tribute materially to the personnel training readiness of RC units.

reviously, the staffing of these units based primarily on peacetime comd and control activities. Only minin consideration was given to their que peacetime operational responsibilitwith respect to aligned wartime comds such as Third Army.

ncreased incentives, such as greater cational opportunities and programs ease the transfer of RC personnel been units, are aiding the overall strength ture. Other efforts to improve retenof personnel involve programs to inse participation of both families and lian employers in an RC unit's activi. Our ultimate goal is to increase total sonnel readiness through meaningful ning, reduction of factors that inhibit ntion and good personnel management. o aid the active Army retention ef, FORSCOM's family support plan—commitment to the military family—ndates improvements in the quality of of our soldiers and their loved ones. ny studies show family members outber soldiers about three to one, and attitudes of spouses are very impor in decisions to reenlist. Therefore, iatives to improve the lot of service ilies are actually a means of protectthe Army's most valuable resource—soldiers.

FORSCOM's continuing mission of developing and maintaining a combat-ready force while going through this dynamic transition of restructuring and modernization has placed heavy demands on leadership at all levels. The challenges we face in this regard are exacerbated by constrained resources; however, we remain dedicated to focusing our priorities and efforts toward improving the state of readiness of our soldiers.

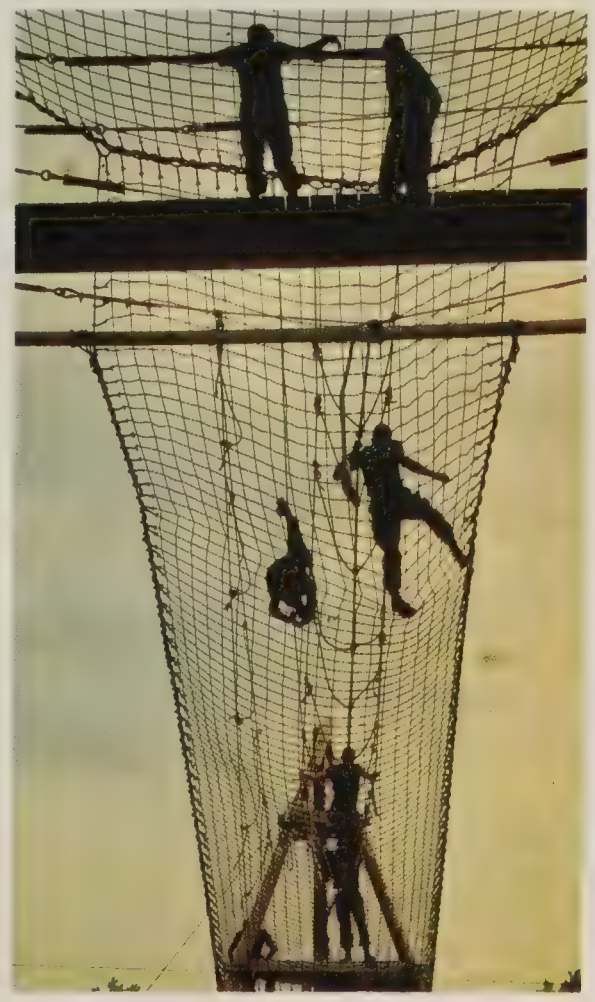
Training is the key to readiness. Simply stated, training makes good soldiers better and builds confidence and cohesion needed to win in combat. The training demands faced by FORSCOM today are considerable but manageable. To be able to field units that will give us battlefield effectiveness greater than that of any potential adversary, we must be prepared to commit units to jungle, desert, Arctic or temperate environments.

To ensure success, FORSCOM training priorities are:

- Individual soldier/leader proficiency
- Unit/team proficiency
- Field exercises
- Special training.

Soldier confidence is developed by realistic training at home station and off-post training areas. This includes rotations to the National Training Center (NTC) at Ft. Irwin, Calif., participation in special training in Alaska and Panama, Capstone-driven exercises and joint exercises such as "Bright Star" and "Gallant Eagle."

Not only do these exercises provide our RC units the opportunity to train alongside active component units, but they also provide them with a chance to perform extensive exercise planning. Units become accustomed to handling the myriad tasks associated with preparing their people for deployment.



Infantry trainees learn to overcome physical obstacles.

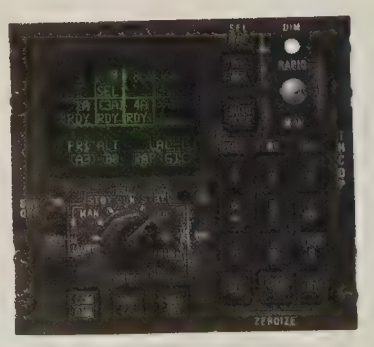
For example, during Gallant Eagle 84 and Bright Star 85, echelon-above-corps



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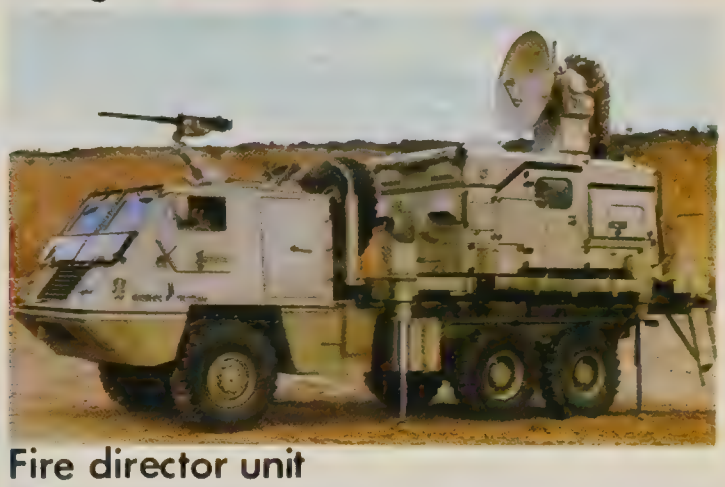
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Firing of the SS - 40



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RC units under the command and control of Headquarters, Third Army, performed their wartime mission. Convoy operations were conducted under the supervision of the 220th Military Police Brigade headquartered at Gaithersburg, Md. The 261st Signal Command from Dover, Del., provided critical communications links to worldwide systems. Logistical functions and requirements for the entire force were monitored by the 377th Theater Army Area Command (TAACOM) of New Orleans, La.

We use these exercises to achieve our goal of being prepared to go to war and fight to win not only the first, but also the last battle.

We hope to develop individual soldiers who are technically competent, motivated and disciplined; molded into aggressive, highly coordinated teams; capable of overcoming extreme adversity; and able to withstand the physical and mental stress of war.

One of the reserve components training initiatives being taken by Forces Command is an amplification of the reserve components overseas deployment training program. This expansion incorporates everything from short-duration, small-unit deployments to month-long major training exercises. The program particularly aids Third Army, which must frequently respond to time-sensitive, unfunded requirements in its area of responsibility.

A major improvement in our training program is the coming of age of the National Training Center. During the past three and one-half years, operations have increased in scope and intensity from 8 heavy brigade rotations in fiscal 1982 to 14 in fiscal 1985.

By the end of fiscal 1985, 45 rotations had been conducted to account for a "throughput" of 44 brigade command groups, 176 battalion command groups, 1,056 officers, 38,292 NCOs and over 150,000 soldiers. Additionally, seven roundout RC battalions have been trained at the NTC since fiscal 1982, and four are scheduled for the coming fiscal year.

Rotational training enhancements now include the following: evaluation of the brigade support area; improved after-action reviews; variety in combat scenarios; improved training packages for company teams to take back to home stations; ability to evaluate cavalry operations; introduction of the extended rotation in May 1985 with the 197th Infantry Brigade; and introduction of heavy-light forces combined rotations that began with a 101st Airborne Division (Air Assault) task force in March 1985.

The NTC's instrumented evaluation system has improved both quantitatively and qualitatively over the past three years. While much remains to be done to provide replication of the full spectrum of the combined-arms battle, working and approved funded initiatives include the "air-ground engagement system and air defense, simulated area weapons effects" and the A-10 MILES (multiple integrated laser engagement system).

The intense 20-day NTC training experience results in a more practical and detailed understanding of "go-to-war" skills. Commanders have widely acclaimed NTC training benefits, the most significant of which is an increased awareness of unit training status. The overall training benefit is reflected, however, in the increased knowledge of doctrine, nuclear, biological, chemical operations and other combat-related operations that are normally not tested completely during on-post training exercises.

A vital leader training program is our effort to improve the leadership, communication and technical skills of our junior NCOs. While the NCO academies provide the common core curriculum of performance-oriented, skill-specific training, our goal is junior NCOs who are leaders and trainers.

Teaching our soldiers how to use and maintain each new piece of equipment is essential to force modernization. We refer to this as "new and displaced equipment training." New equipment training is the training of users, supporters and trainers to operate, maintain and employ new equipment. Displaced equipment training is training users and supporters to operate, maintain and employ equipment already in the Army inventory, but transferred to a unit that has no prior experience with it.

Force modernization must be accomplished with the least possible decrement in unit readiness. In many cases, the influx of new and replacement equipment will cause a unit to virtually suspend normal mission training while it learns to use the unfamiliar gear, and we are committed to keeping such downtime to a minimum.

Other major areas of concern include the improvement of corps/division and joint operations exercises. FORSCOM will continue participation in special training exercises for units through division and corps levels. Exercises such as "Reforger," "Big Pine," and "Bright Star" were among the 10 directed and 32 coordinated joint service exercises during 1984. Due to the large number of reserve components units participating in these joint exercises, and in view of their limited planning time, commands such as Third Army have had to develop detailed exercise troop lists three years in advance rather than the prescribed two years.

With the AOE's dependence on reserve components forces, mobilization training assumes equal importance with the other readiness initiatives I have discussed. The Army's peacetime mobilization objective is to facilitate rapid deployment in response to national policy goals. This requires us to develop plans and conduct



An infantryman in training learns how to apply an emergency field dressing.

ıing aimed at mobilizing and deploy-
a total force.
is essential that FORSCOM continue
mprove mobilization training of ac-
and reserve components to achieve
training objectives. Two major com-
d post exercises, "Night Train 84" and
wder River/MOBEX 85," were con-
ed in 1984. These exercises, sponsored
he Joint Chiefs of Staff, successfully
nined plans, policies, procedures and
ems needed to support mobilization.
eployment training exercises center
ınd a large force strategically deployed
joint operations environment. Con-
of these exercises highlights special
iderations unique to various theaters.
or example, Third Army participated
Bright Star 85 in the Middle East.



Mechanized infantrymen advance on the double at the National Training Center, Ft. Irwin, Calif., as a Dragon antitank gunner fires his missile.

ong the units deploying for this exer-
last July and August were the 1st
ade, 24th Infantry Division (Mecha-
d), Ft. Stewart, Ga.; 1st Battalion,
h Infantry, 101st Airborne Division
Assault), Ft. Campbell, Ky.; 2nd Bat-
n, 508th Infantry, 82nd Airborne Di-
n, Ft. Bragg, N.C.; elements from
5th Special Forces Group, Ft. Bragg;
ents from Ranger units from Ft. Ben-
, Ga., and Ft. Lewis, Wash.; and ele-
ts of the 11th Air Defense Artillery
ade, Ft. Bliss, Tex., along with 48
r active Army and 81 National Guard
Reserve units.
a different arena, FORSCOM units
ntly conducted back-to-back Reforger
urn of Forces to Germany) strategic deployment exercises. In August and September 1984, the 5th Infantry Division (Mechanized), Ft. Polk, La., 1st Brigade, 2nd Armored Division, Ft. Hood, Tex., and 2nd Battalion, 75th Infantry (Rangers), Ft. Lewis, along with 16 other active Army units and 60 National Guard and Army Reserve units, deployed to Europe for Reforger 84.

Reforger 84 saw significant first-time accomplishments designed to strengthen our capability to rapidly reinforce European forces. The new fast sealift ship U.S.N.S. *Algol* was used for the first time in a NATO exercise to transport the vehicles and equipment of the 5th Infantry Division (Mechanized). For the first time, modern M1 Abrams tanks and M2 Bradley fighting vehicles were issued from storage sites in West Germany, in this case to the 1st Brigade, 2nd Armored Division. The 332nd General Hospital was the first 1,000-bed Army Reserve general hospital to conduct training in Europe. The 2nd Battalion, 75th Infantry (Rangers), conducted a strategic night airdrop after flying nonstop from Ft. Lewis to West Germany. Reforger 84 saw the largest number of RC units ever deployed.

Reforger 85 followed just three months later, in January and February 1985, designed to assess the impact of winter deployments in central Europe. Soldiers of the 4th Infantry Division (Mechanized), Ft. Carson, Colo., the 197th Infantry Brigade, Ft. Benning, and the 1st Battalion, 75th Infantry (Rangers), Hunter Army Airfield, Ga., along with 12 additional active Army units and 35 National Guard and Reserve units, overcame the test of severe weather during the worst winter in Europe in over 40 years.

Three aerial ports in Europe and one seaport were used to deploy within a compressed time, to test a surge in the lines of communication and more accurately portray the sequence of events and logistics requirements of a real-world contingency. Although weather caused problems, and delays were experienced throughout the deployment, all units reached assigned destinations in good order and on time.

To test the Army's ability to phase in reinforcements, as would be required in a real conflict in Europe, the 197th Infantry Brigade entered the U.S. corps field training exercise "Central Guardian" after the maneuvers began. This was the first time the Army tested supplying reinforcements to the front after the start of "hostilities."

The planning, coordinating and training required to execute two Reforger exercises within six months demanded a concentrated command and staff effort and are indicative of the importance FORSCOM attaches to Reforger.

In 1984, FORSCOM also initiated a training program with fast sealift ships, "Calm Mobility I" (CMI), which combined nine separate active and reserve exercises and training activities, with deployment training on the U.S.N.S. *Capella*. CMI is the first of an annual series to provide deployment training and identify lessons learned for larger joint exercises or actual contingency deployments.

FORSCOM units trained in Central America during 1984 in exercises such as the Big Pine series, "*Granadero I*," and deployment training exercises in Honduras. In August 1984, the secretary of the Army approved a concept which allows RC overseas deployment training with active commands on exercises in Third World countries.

Since then, one major exercise involving the National Guard has been conducted: "Blazing Trails 85."

Blazing Trails 85 was conducted at the invitation of the government of Panama from January through May 1985. It was a combined engineer exercise in the Azuero Peninsula of Panama in an isolated area 150 miles west of the Panama Canal.

It included elements from the Panama Defense Forces, active Army forces stationed with the 193rd Infantry Brigade in Panama, and Army National Guard units



A soldier in protective gear washes down a jeep during chemical defensive training.

from Puerto Rico, Louisiana, Florida, Missouri, North Carolina, Wisconsin, New Jersey, Kentucky, Texas and Alabama. Army National Guard and Panama Defense Force engineers constructed 26 miles of roadway between Llano de Mariato and Arenas La Honda in Veraguas province during the exercise.

In a different kind of test, during the first five days of May 1985, the North Carolina National Guard proved conclusively that it can mobilize. The entire North Carolina Army National Guard, more than 12,000 troops in 135 units, took part in operation "Hickory Response," which simulated a federal call-up, and tested the active Army's ability to handle the massive influx of troops at Ft. Bragg. It was the largest peacetime mobilization of the Guard. While problems were identified, the operation was an unqualified success from the perspective of Ft. Bragg, the entire North Carolina Guard and the individual soldiers participating.

FORSCOM evaluates the results of all such training exercises throughout the year to determine future requirements. Corrective action is tracked through our FORSCOM mobilization and deployment improvement program, which provides us continuous management of the problem resolution process. Short of the opportunity of participating, it is one of the most tangible benefits we get from the time and money expended on the exercises. The primary goal is to improve our ability to rapidly mobilize and deploy worldwide. For fiscal 1985, the Army scheduled over 350 mobilization exercises. This completed the first phase of the program in which each of the early-deploying units will have participated in at least one mobilization exercise.

Coupled with exercises, FORSCOM has taken a new focus on evaluating RC training. The FORSCOM form 1-R, *Report of Training Performance of Reserve Components of the Army*, is undergoing some significant refinements.

Some of the changes that were implemented in fiscal 1985 include: more specific guidance on preparation of mission-essential tasks lists, emphasis on operator maintenance and evaluation of the full annual training (AT) period of units undergoing external ARTEP (Army training and evaluation program) evaluation. Major improvements to the 1-R form are being developed to provide a meaningful tool in shaping follow-up training. The forms will address core tasks, mission-essential tasks, basic soldier tasks and physical fitness and will allow active involvement by the RC chain of command.

Another important development in our mobilization training is the introduction of automated systems in support of this effort. Mobilization movement control is being designed to expedite highway mo ment control at the state level and ens adequate coordination with proper lo authorities.

This initiative is of particular imp tance in planning large-scale joint tra ing exercises such as Gallant Eagle, wh involve the movement of forces from merous locations to California.

Combined, all of these mobilizat training and evaluation efforts will h ensure that the AOE is as ready as can make it to meet its commitments. providing adequate opportunities for and RC units to work together, we pare FORSCOM soldiers for the acc plishment of their tasks in suppor national goals. That objective will tinue to be our principal concern.

Structuring, resourcing, training, bilizing and deploying the force—t are the key elements of FORSCOM p ress in fiscal 1985. We can be sure one thing will not change this year- need to constantly raise our stand We have a good Total Army today best I have ever served with, but we make it better. FORSCOM has a key to play.

Unquestionably, the era of the "Army of Excellence" is now. FO COM's desire for excellence ensures we will have an Army ready to fig called upon by the American people can be satisfied with no less!



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Top Leadership Qualities Have Roots in Schools



Photo: Jeff McE

An infantry patrol on a training exer moves down a forest road, pa smoke ma

By Gen. William R. Richardson
Commanding General,
U.S. Army Training and Doctrine Command

ny doctrine and training are shifting focus to
erational art—the vital conceptual middle ground
war fighting—while stressing the kind of
dership that allows officers and NCOs at all
els to put character, knowledge and experience
work on the modern battlefield.



A Ranger leader signals his men forward during maneuvers: Army training now stresses full understanding of overall doctrine by junior leaders.

Photo: Steve Crawford

ar, like most other things, is a science
be acquired and perfected by diligence,
perseverance, by time, and by practice.
—Alexander Hamilton

ew American military leaders have
undertaken a more important or
symbolically salient combat mis-
than the one entrusted to Lt. Col.
ander Hamilton at Yorktown on the
of 14 October, 1781. With muskets
aded to avoid a premature warning
Col. Hamilton and his light infan-
surmounted obstacles and obstruc-
to launch a bayonet attack against
ibt number 10 in the British defenses.
15 minutes of fierce hand-to-hand
ng, the key stronghold fell into Amer-
hands, rendering the enemy perimeter
ise around Yorktown untenable. Four
later, with the surrender of the be-
d garrison, American liberty was se-
d.

uring the past four years the storm-
of redoubt number 10 and the deeds
lexander Hamilton have served to
e the theme of "Yorktown—the spirit
ctory" more widely appreciated and understood. Today, the words of Alexander Hamilton quoted above are equally relevant to the Army's "leadership" theme. Not only is his statement alert to a fact of preparing for war that has too often been forgotten, but there can be little doubt that his general estimate is even more correct today than anytime in the past. For war is a science and also an art; and it can be prepared for only through the diligence, time, practice, and perseverance of the Army's leaders. While no one underestimates the difficulty of this leadership task, it is impossible to exaggerate its necessity.

Preparing leaders for war is TRADOC's (Training and Doctrine Command's) top priority and dominant concern today. While a complex interplay of considerations necessarily accompanies the building of any Army, the strength of units depends primarily on leaders who are confident practitioners of the science and art of war. Thus, the surest way to strengthen the bond between preparation in peace and success in war is through the rigorous development and continuous professional growth of the Army's leaders.

Both military history and projections of future battlefields testify to the need for professional skills and knowledge, solidly grounded and tirelessly accumulated.

The skills and knowledge of leaders have historically been built upon a foundation laid in the Army's schools. When we examine the best leaders of the Army in the past, almost always we find a strong training and educational experience, or some professional support provided by a school instructor that has been assimilated and then extended.

Generals of the Army George C. Marshall, Dwight D. Eisenhower and Omar N. Bradley; Generals Lyman L. Lemnitzer, Maxwell D. Taylor and Bruce C. Clarke; and Lt. Gen. James M. Gavin are a few among many who have acknowledged their debt to the Army's school system.

Schools are, moreover, the crucible from which come the doctrine, tactics, techniques and procedures that affect the outcome of war. Because what is learned in school and what is applied in the field are inextricably intertwined, the programs



New, more capable equipment offers unprecedented opportunities for battlefield maneuver: M1 Abrams main battle tank on the move.

of instruction schools pursue, the instructors they assign, the standards they set and the requirements they impose are all of far-reaching importance. Professional training and education nourish professional standards, and professional standards lead to professional performance.

The imperatives of TRADOC schools are therefore quite clear. They must provide to the field officers and noncommissioned officers (NCOs) who are technically and tactically competent, who set high standards, who teach subordinates, and who can train units to fight and operate in a "mission-type order" environment.

The character and performance of these leaders must reflect a common set of warrior values. Their confidence, self-discipline and stamina must enable them to lead by example in physically and mentally stressful environments. All leaders who attend TRADOC schools must aspire to meet these professional standards.

Whether during a tough field trai exercise at Grafenwoehr or Nightm Ridge, or in actual combat as in Gren the NCO can be found at the cri point of action. He must be both a sk trainer and leader, training soldier high performance standards, demons ing technical and tactical proficiency diating confidence in all he undert and constantly seeking responsibilit

The indispensable prerequisite fo of the above is an NCO well traine the manifold activities that he must form. Programs are now in place to m this happen.

NCO leadership training has been dardized throughout the Army so combat, combat support and comba vice support NCOs all acquire the damentals of leadership and have a mon understanding of their respon ities regardless of their specific job. nical training for all grades has bee panded, noncommissioned officer emies have been accredited, and rec fication training for NCOs who un a change of military occupational cialty (MOS) is now required.

With the advent of AirLand Battle trine, its emphasis on maneuver,



GEN. WILLIAM R. RICHARDSON has served as the commander of the U.S. Army Training and Doctrine Command (TRADOC) since March 1983, after a tour as the deputy chief of staff for operations and plans with the Department of the Army staff in Washington, D.C. A 1951 graduate of the U.S. Military Academy, Gen. Richardson holds a master's degree in business administration from George Washington University and has attended the Armed Forces Staff College, the Industrial College of the Armed Forces and the Canadian Army Staff College. He has served as the deputy commanding general of TRADOC and as commander of the Combined Arms Center and Ft. Leavenworth, Kan.,and as assistant commandant of the Infantry School. Gen. Richardson first saw combat in Korea with the 32nd Infantry of the 7th Infantry Division during 1952–53. He commanded the 3rd Battalion, 39th Infantry of the 9th Infantry Division, in Vietnam and was commander of the 198th Infantry Brigade there. He holds two Silver Stars and the Purple Heart. His most recent overseas tour was as commander of the 193rd Infantry Brigade in the Panama Canal Zone.

entralized battlefield, it is more critical
n ever before that NCOs fully under-
id the way in which we fight. They
st recognize the need for effective re-
nse to fleeting opportunities, learn to
ard sudden change as routine rather
n exceptional, and know how to train
iers to exploit the improved maneuver
ability that new equipment continues
provide.

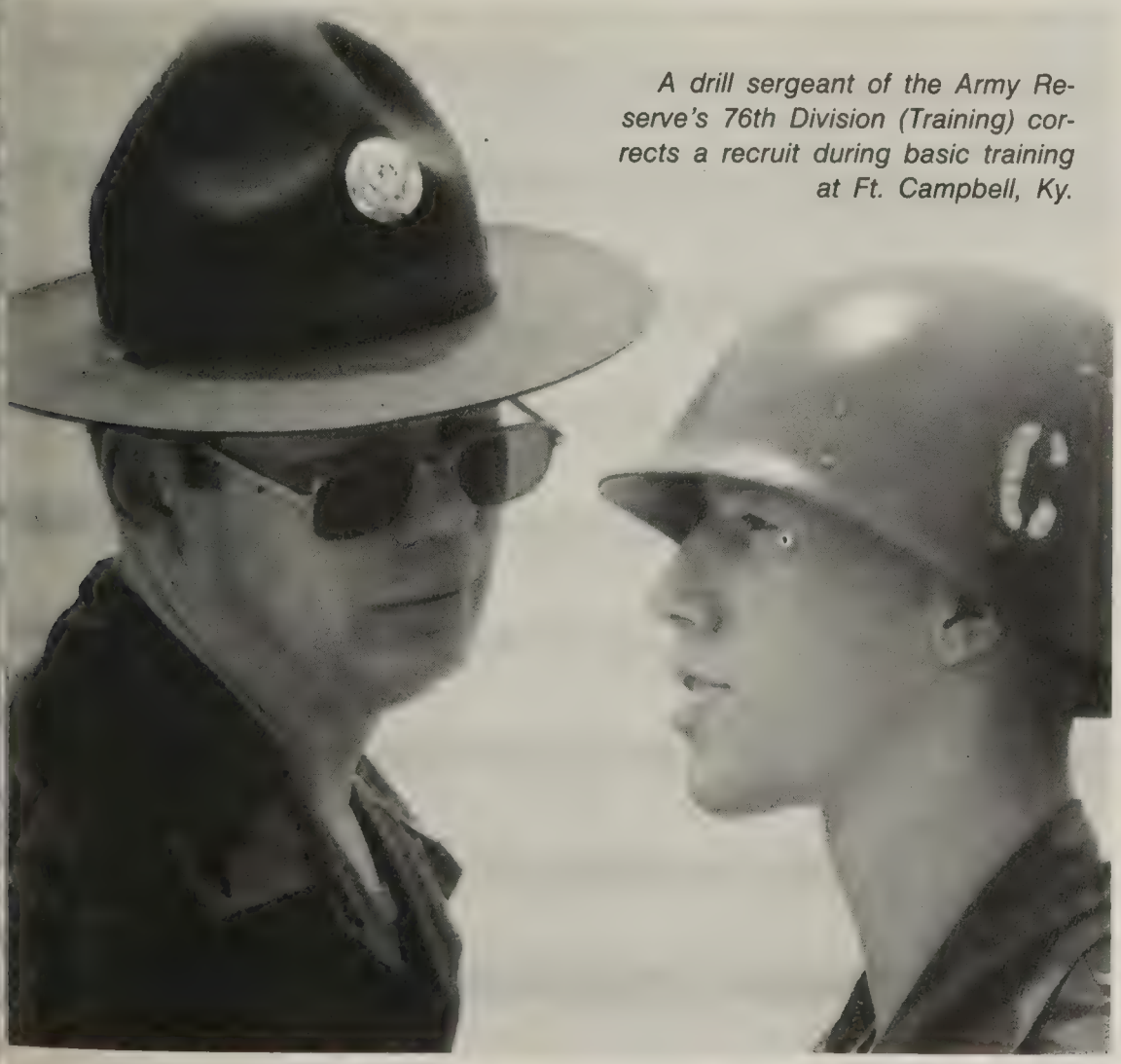
hey must think offensively rather than
nsively, apply their initiative, and
loit the available means at hand to
inate the situation on the battlefield.
COs must also practice the tenets of
and Battle in platoons, squads and
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t from which they can conduct this
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re it can be implemented throughout
force. TRADOC is working hard to
elop and publish the essential tech-
ues and procedures which tie the ac-
s of NCOs and those of their soldiers
actical tasks at the company and bat-
n levels.

he investment in NCO professional
elopment training today will provide
dends in the future. While NCO train-
in the unit is clearly an essential, that
ning by itself cannot totally anticipate
nges in requirements driven by doc-
al and force modernization initiatives.
is incumbent on leaders throughout the Army to ensure that NCOs take full advantage of the opportunity for professional growth that is now provided by the noncommissioned officer education system.

In officer branch schools, lieutenants and captains are learning how to fight and how to take charge of a unit and train that unit to fight. The major emphasis is on providing broad-based, in-depth, hands-on experience in tactics, training, logistics, weapons, equipment and leadership.

Combat arms officers acquire an understanding of the fine points of tactics, from the use of terrain to command and control procedures; from the execution of battle drills to the conduct of a high-payoff brand of maneuver war. Officers of the supporting arms and services learn how to fight and survive while providing timely support to the combat arms.

The military qualifications standards (MQS) program now being developed and fielded will achieve standardized training for the levels of precommissioned cadet through captain. Based on the analyses of training requirements, MQS tells officers what they must know to reach expected performance levels. All programs are designed to qualify the officer in his branch, while establishing a foundation for continued growth in subsequent years.



A drill sergeant of the Army Reserve's 76th Division (Training) corrects a recruit during basic training at Ft. Campbell, Ky.

The principal objective in the officer basic courses (OBC) is to produce lieutenants fully capable of leading, maintaining, and training their units how to fight upon arriving there. Several years ago this was not being accomplished. There were voids in OBC ranging from inadequate technical, tactical and leadership training to insufficient time spent practicing basic branch skills in the field. Today, this situation has been reversed.

Recent improvements in OBC include more tactical training exercises with troops, hands-on certification of vehicle maintenance skills, added emphasis on basic skills such as map reading and land navigation and expanded instruction on communications equipment and weapons.

Additionally, leadership training has become less theoretical and more oriented to practical application. As a result, officer basic courses are sending to the field lieutenants who are more competent and confident than ever before.

The officer advanced courses are geared toward broadening tactical and technical knowledge and preparing captains for company command as well as their next assignment. All courses were standardized at 20 weeks as of January. Add-on modules of up to six weeks provide intensive, job-specific training for an immediate assignment.

Captains are being given every available opportunity to experience the pulse of battle through event-oriented training in the field. On the ground, they learn to identify complex situations in advance, develop logical answers and take risks while implementing solutions to the difficult problems they will encounter in war.

Throughout both the basic and advanced courses, field training is supplemented by leader reaction courses and training exercises without troops. Student performance is routinely observed and critiqued by senior leader-teachers.

It is impossible to overstate the importance of this branch training and education. Captains in the officer advanced course, for example, are meeting a watershed wherein they acquire a fully developed appreciation of their branch and its place in the Army structure. They develop the solid foundation necessary to prepare them to become superb battalion-level commanders of the future.

The Combined Arms and Services Staff School (CAS^3) at Ft. Leavenworth, Kan., provides training for captains in staff skills required at brigade, division and installation level and serves as a transition to field grade responsibilities. It emphasizes

staff interaction and develops skills in thinking, analyzing and decision making in an intense small-group environment.

Subject matter includes logistics, training management, budgeting, mobilization, deployment and combat operations. More important, the syndicate method of instruction—more appropriately called "mentoring"—is having amazing results on the young captains attending. Their confidence level escalates during the nine weeks, and the Army is clearly seeing the increased competence of these young officers when they return to their units. CAS[3] will be fully implemented in fiscal 1987, with the 1979 officer year group the first to be fully trained.

In the Command and General Staff College (CGSC) and the School for Advanced Military Studies (SAMS), also at Ft. Leavenworth, majors learn how to plan and sustain flexible maneuver warfare. The thrust is on synchronizing combat power, integrating logistics and supporting arms, and applying operational procedures and command techniques which permit bold, fast-moving operations.

CGSC steeps students in both doctrine and tactics, and challenges them to be original and creative through practical application. In SAMS, selected officers remain at Ft. Leavenworth for a second year, devoting themselves to an in-depth theoretical and practical study of the science and art of war.

Recent reports from field commanders indicate that this second year at Ft. Leavenworth, which was reintroduced in 1983 after a lapse of over 40 years, is already paying great dividends. As the Army acquires the systems and fields the organizations to carry out actions at the operational level, SAMS and CGSC are focusing more instruction on the operational level of war.

Clearly, developing leaders with operational as well as tactical expertise will represent a major training challenge to the Army in coming years. This we must do in preparing our leaders for war.

Three years ago, the Army adopted operational art as a separate division of military studies, restoring the study of theater-level operations to doctrine after an absence of almost 30 years. By installing the operational level of war between strategy and tactics, the Army acknowledged that the planning and conduct of campaigns and the linking of military means to political goals merited separate study. So far, this change has stimulated thought and study at Ft. Leavenworth schools and has provoked some discussion in military journals, but the operational level of war has yet to receive critical attention in the forces in the field.

This will not change without a deliberate and effective training effort. Yet many difficulties lie before us. The Army's senior leaders have not been trained or had experience in the operational level of war. Middle-grade officers, who must perform operational staff duties and mature into positions of senior leadership, are similarly inexperienced. Until recently, our schools have neither troubled themselves with campaign studies nor encouraged professional reading in large-unit operations.

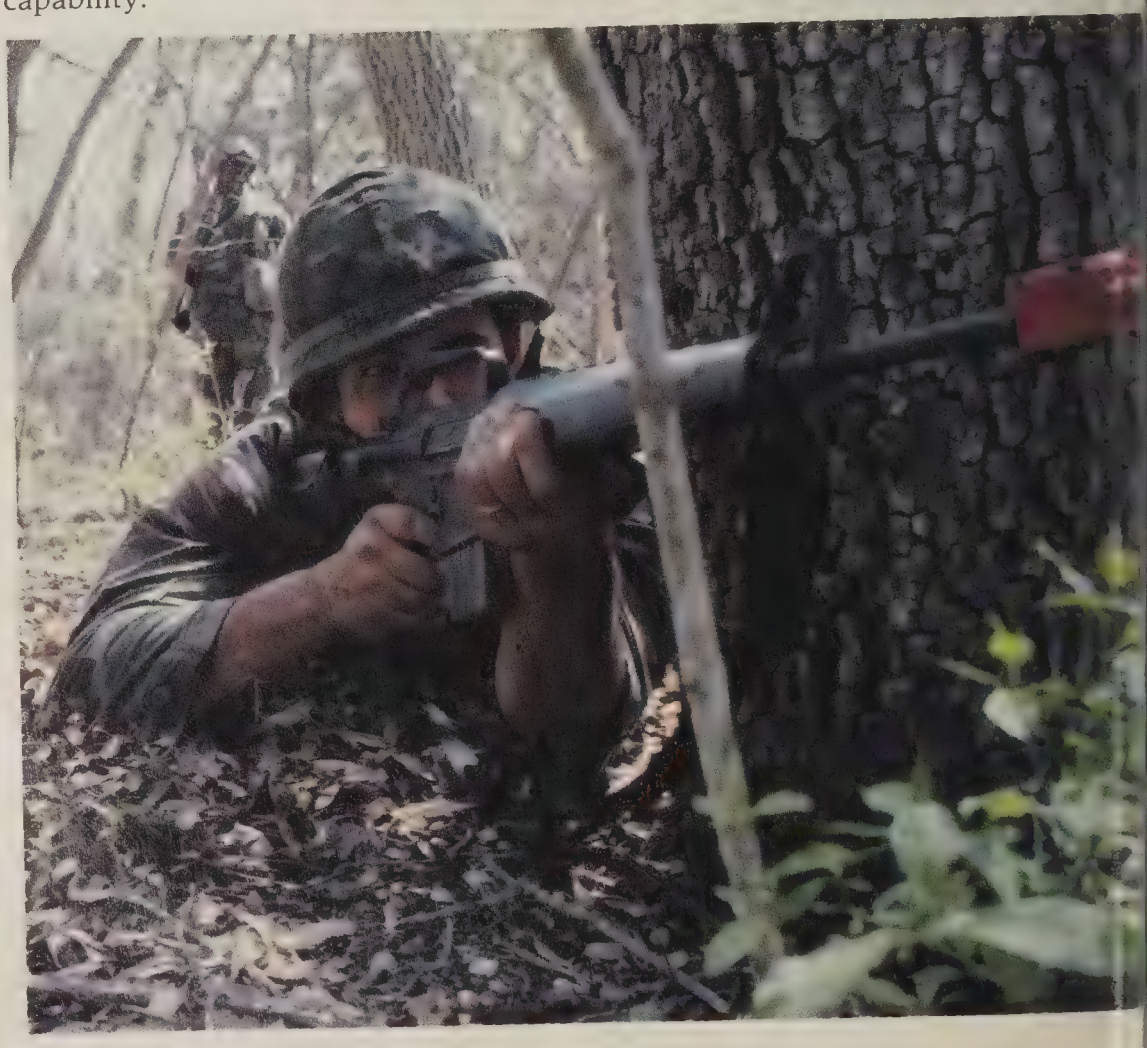
Over the years, we have watched operational levels of command disappear. Commanders, force designers, trainers and military educators alike have let our joint training programs slip almost out of existence and generally ignored the importance of joint and corps staff training in favor of tactical subjects. In sum, the Army has to recover a lot of ground before it can convert the tenets of AirLand Battle into a real operational capability.

Efforts now under way at Ft. Leaven worth will do much to correct the Army current deficiency by training and edu cating officers in the operational level war.

Another aid will be the publication a revised edition of *Field Manual (FM 100-5, Operations*, this fall. While th 1982 edition reintroduced operational a to American doctrine, it did not develo the subject in detail. The second editio will more precisely describe the nature the operational art, place it in its prop relationship to tactics and provide co siderations for defensive and offensi campaign planning. At about the sa time the new *FM 100-5* appears, t manual for corps operations and for t operations of echelons above corps w also be published.

The Army is just now beginning to capture its understanding of the mo ment, maneuver, employment, logist and intelligence requirements of la forces and to coordinate ground, air a naval campaigns with political goals pursuit of operational objectives. Expan doctrine will help, but effective train in both the schoolhouse and the field w be necessary to translate concepts i capability.

Over the past few years, experience the National Training Center (NTC) Ft. Irwin, Calif., changes in technol and tactics, and the lack of standardi training programs and philosophies h made it apparent that the Army trai



Simulation technology has revolutionized Army training: an infantryman sights a rifle fitted with a laser engagement device.

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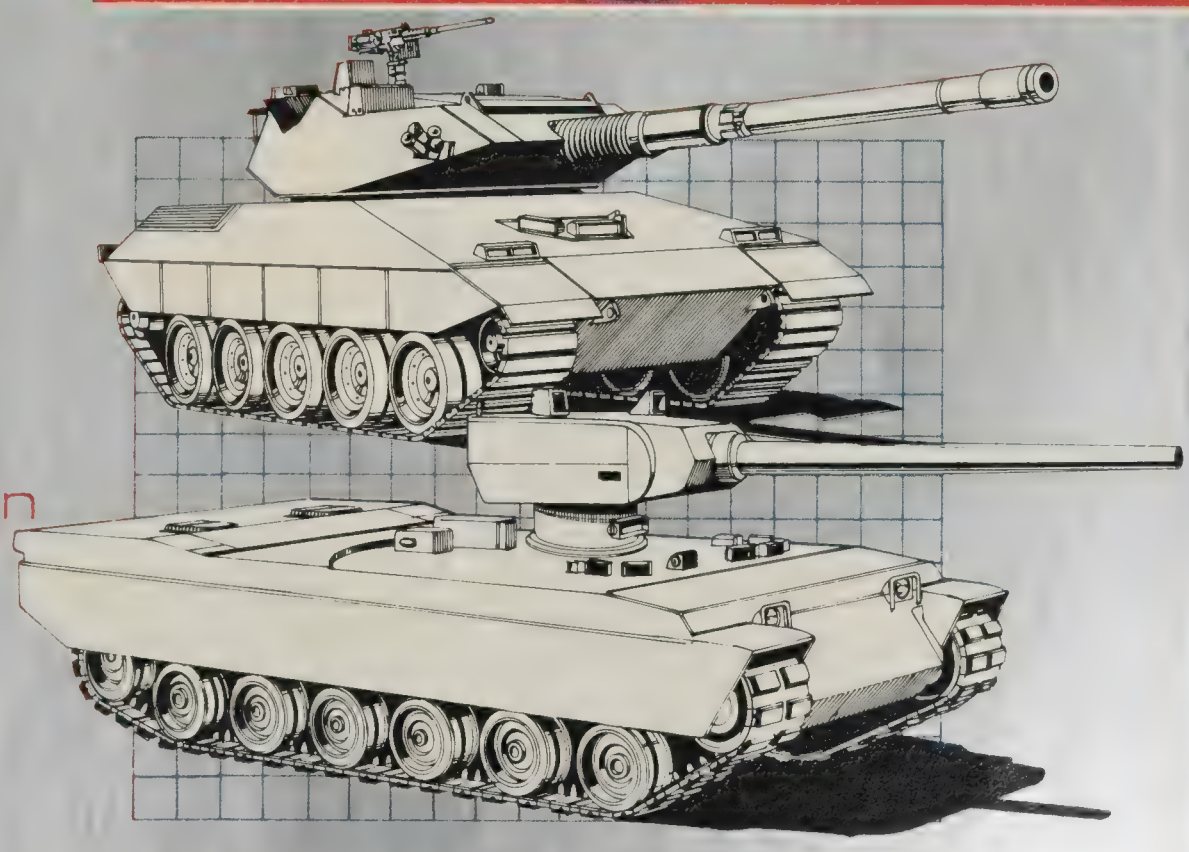
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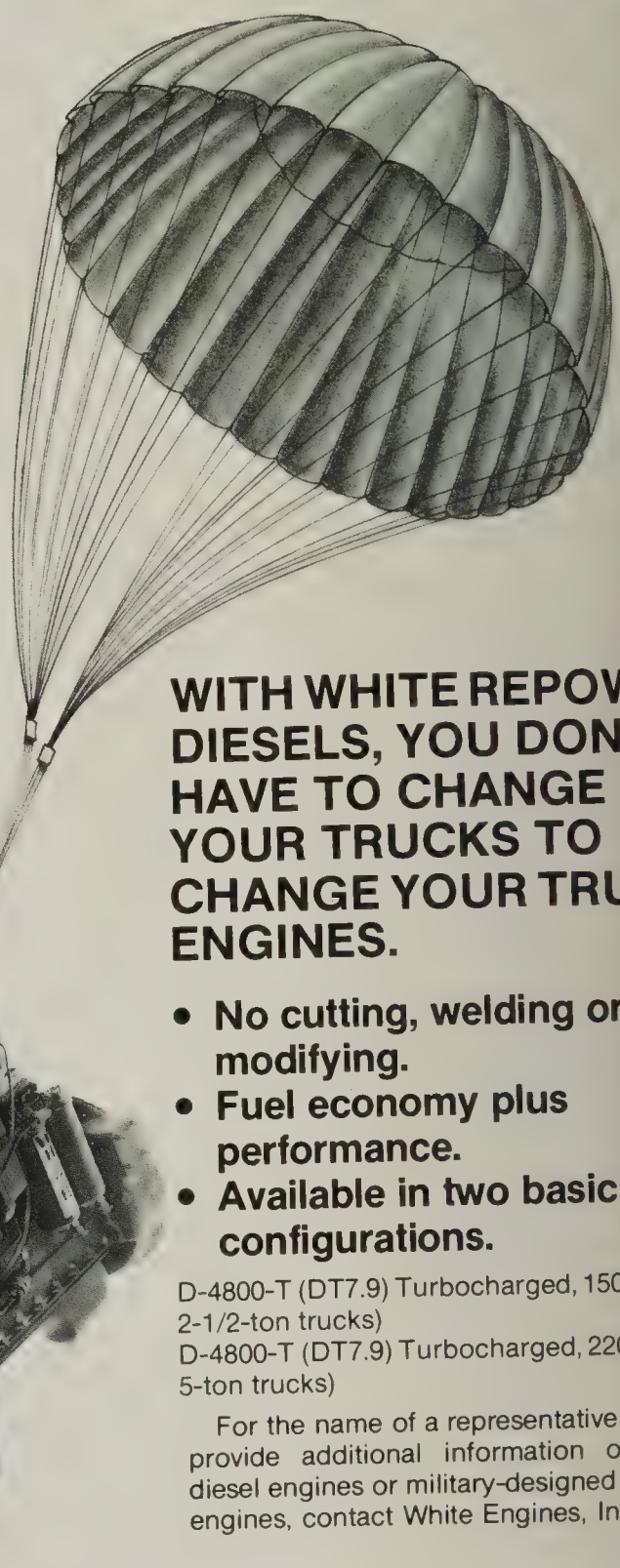
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evaluation program (ARTEP) was not iding the complete training support units require. TRADOC has now loped an improved ARTEP, which esents an evolutionary response to Army's changing training needs, one will provide a more useful tool for manders at all echelons.

ıe improved ARTEP consists princi- of an ARTEP mission training plan ARTEP drills. The mission training provides platoons, companies and alions with a complete training guide chieving unit proficiency. Drills link idual and collective training by weld- oldiers into effective teams. As train- progresses within the unit, drills are bined, enabling units to perform ever e demanding collective tasks.

ısically, the overall system works like from his unit mission and contin-



Photo: L. James Binder

'It is more critical than ever before that NCOs fully understand the way in which we fight.'

gency plans the commander develops a mission-essential task list (METL) which shapes his unit training plan. That plan lays out the tasks to be trained and the standards that apply. At each successive subordinate level, the unit training plan is refined and made more specific.

The battalion commander makes this happen by a thorough assessment of his current training status. He takes into account observed unit strengths and weaknesses from previous training, identifies soldier and leader weaknesses, and considers personnel turnover and skill decay.

This analysis results in a specific list of drills to be performed and specific individual and leader tasks which must be mastered to execute those drills to standard. Guided by the ARTEP mission training plan, ever increasing levels of training performance are achieved, culminating in ARTEP mission proficiency.

Device-based training will continue to grow as an effective alternative to training with major hardware in the field. Training devices offer especially great potential to reserve components units, which must train to levels of proficiency comparable to those of active units despite time and equipment constraints.

Computer-assisted training simulations will also be increasingly used by commanders and battle staffs from battalion through corps. As the transition is made from the fielded family of manual simulations to computer-driven simulations, the Army will acquire the means to train leaders under stress in the realistic execution of AirLand Battle doctrine against dynamic and realistic levels of opposing forces.

Today, the NTC is providing stateside heavy battalions with the most challenging training found anywhere in the world. The 14-day experience consists of live-fire engagements conducted against computerized targets arrayed in Soviet attack and defensive formations, together with force-on-force training which enables units to operate against a large-scale opposing force outnumbering them by as much as three to one.

The learning curve at the NTC is steep, as controllers evaluate performance on the ground and assist in the learning process in an after-action review using the Socratic method. A computerized evaluation system identifies and categorizes errors, so that each unit receives a comprehensive assessment of its NTC experience that serves as a basis for future home-station training.

Although some light units have the opportunity to train with tank and mechanized battalions at the NTC, there is a compelling need to provide all our light infantry, airborne, air assault and Ranger battalions with an identical level of unconstrained, realistic training.

To that end, TRADOC has developed a proposal for a light force national training center at Ft. Chaffee, Ark. It offers the major advantages afforded by the



viation crewmen refuel a Cobra attack helicopter in the field, during training at Ft. Carson, Colo.

NTC at Ft. Irwin while recognizing realistic resource constraints. The heart of each battalion rotation would be a ten-day field training exercise, which would train battalions in all aspects of tactical operations and support in a manner closely approximating actual combat.

While such a facility would make demands on resources for which there are alternative uses, light forces are clearly the most likely to be employed in contingency operations. They simply must have the same quality training facility as heavy battalions.

In announcing leadership as the Army theme for 1985, Secretary of the Army John O. Marsh Jr. tasked the Army to perform the most extensive, pervasive study of leadership that any army has ever undertaken anytime in history. This challenge demands our attention, resolve and solid commitment to examine how we are preparing our leaders to fight on future battlefields. Our approach in TRADOC is to focus on character and professional knowledge and their application in the field.



Trainees help one another with cumbersome chemical protective gear.

We believe the character of leaders ought to reflect strong ethical precepts and adherence to high standards, self-discipline and dedicated performance of duty. We believe their knowledge ought to be of weapons, doctrine, tactics and logistics; of how to plan and conduct military operations; and of how to care for, motivate and inspire the men and women on whose performance the mission depends.

We believe leaders ought to be able to translate character and knowledge into practice; to exert the leadership that makes for success in situations that are mentally and physically stressful; to apply skills and insights to reduce confusion to predictable patterns; and to apply judgment and improvisation in order to exploit fleeting opportunities, react promptly to changes and take necessary risks.

Admittedly, these are high standards for young leaders—indeed, for all leaders. Some may fail to measure up, but to restrict ourselves to anything less would be inconsistent with a profession where the challenges are of extraordinary significance and the risks very great. Thus, our approach to leader development in TRADOC schools is grounded in the steadfast conviction that only excellence is a worthy aim. We want quality and we can get it.

Clearly, every part of the Army has a role to play in ensuring that leaders from sergeant to general have the character, the knowledge and the experience to lead in war. Recruiters must attract quality young men and women with the intelligence and motivation to develop into future leaders.

The introduction of the Bradley fighting vehicle, for example, doubles the tactical responsibilities, as well as the number of weapons and systems that an infantry squad leader must know how to employ. Whereas the armored personnel carrier once traveled at 19 miles per hour, the Bradley travels at 31. So today's mechanized infantry squad leader must not only still motivate and inspire his soldiers in the face of battle, but he must also be smarter than ever before.

Those in troop units and staff sections have a tremendous role to play in training and teaching their subordinates on a daily basis. There are few officers or sergeants who could not profit from the instruction and encouragement of more experienced hands. Leaders who fail to provide this help act beneath their privilege and their obligation.

Brigade commanders must teach battalion commanders, battalion commanders teach company commanders, company commanders teach platoon leaders and so on down the line. Similarly, experienced sergeants must not only train junior NCOs, but assist young lieutenants to develop the competence and gain the confidence needed to lead.

The Army's senior officers have the responsibility to issue mission-type orders and empower leaders to execute them. They must protect leaders from being diverted from their proper paths by supporting and encouraging commanders who are conducting effective, mission-orient maneuver training. They must seek a hi standard of training effectiveness by eli inating unnecessary requirements and su pressing activities that detract from tra ing.

Senior leaders have the responsibil to be mentors, training and teaching th subordinates, and they are no less ob gated to see that professional derelicti and incompetence are not tolerated.

Finally, all leaders throughout the Ar must place the pursuit of tactical a technical competence above other ki of endeavors, insist that units and org izations devote their energies to rigor and realistic mission-oriented traini and ensure high standards are maintai and necessary reforms are made in a where they are empowered to act. I lieve this is happening in the Army to

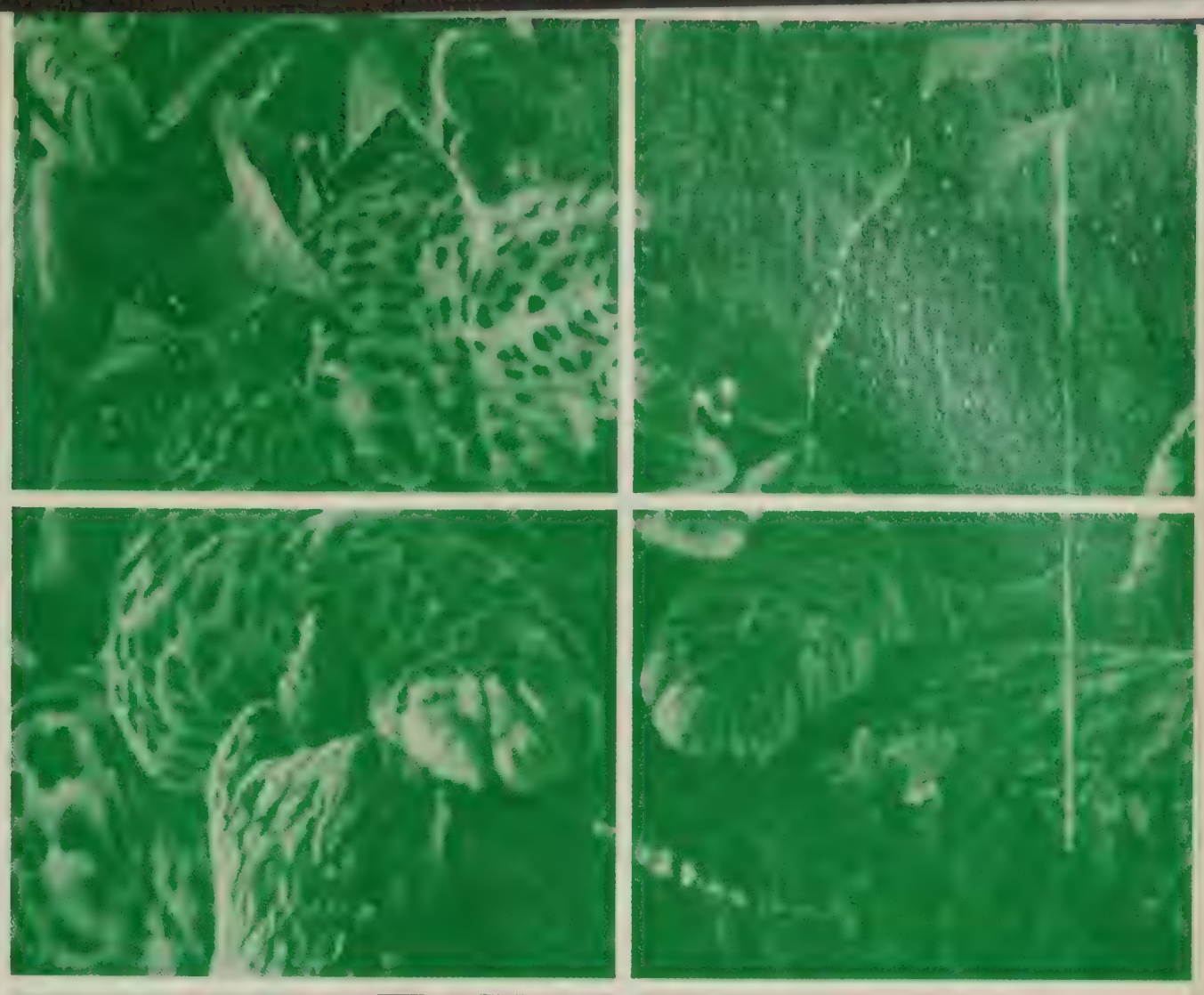
While victory in war is often the come of a complex of factors, the A cannot win a single battle unless its u are led by NCOs and officers who competent and confident practitioner their profession. Certainly, nothing occurring in TRADOC exceeds in im tance the task of preparing leaders war.

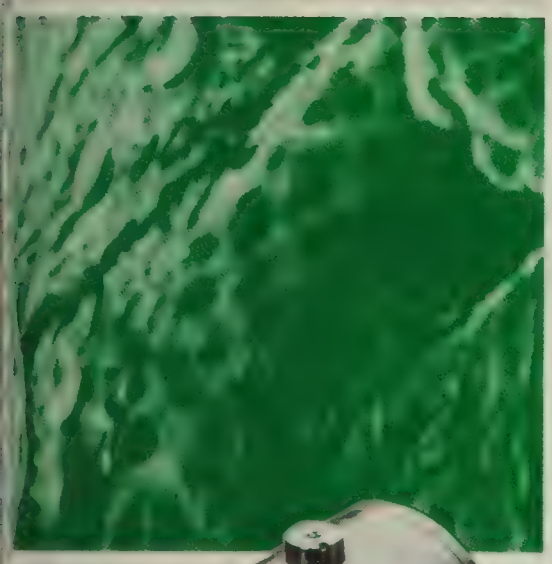
We in TRADOC are resolved tha leaders trained in our schools will a in their units ready, able and determ to prepare those units for war. We resolved that leaders will understand preparing for war requires diligence, practice and perseverance.

We are resolved that leaders will play that understanding of preparin war in action. Indeed, as we say in DOC, "Excellence starts here."



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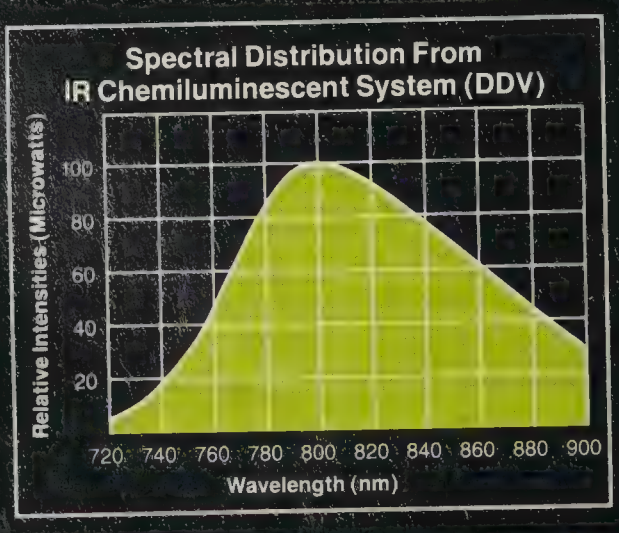
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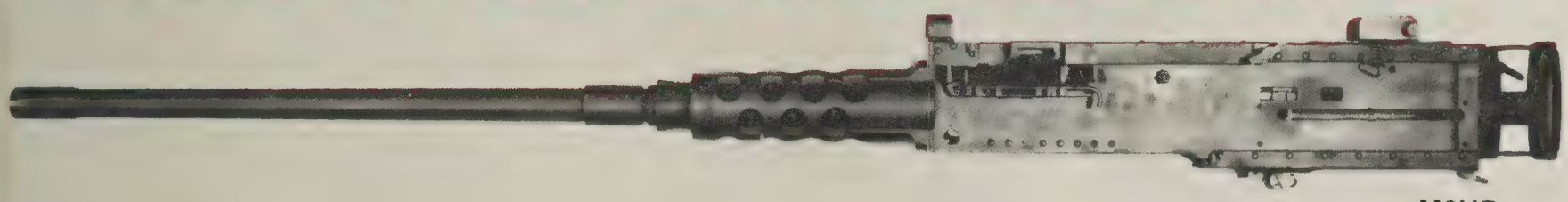
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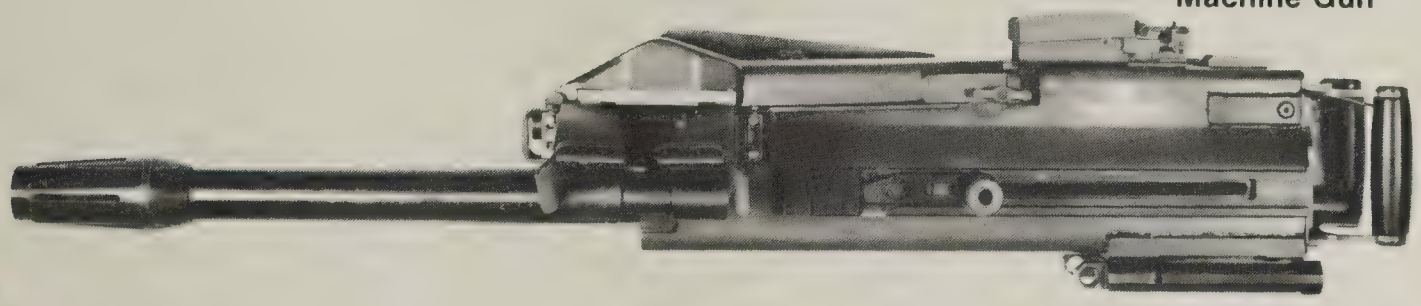
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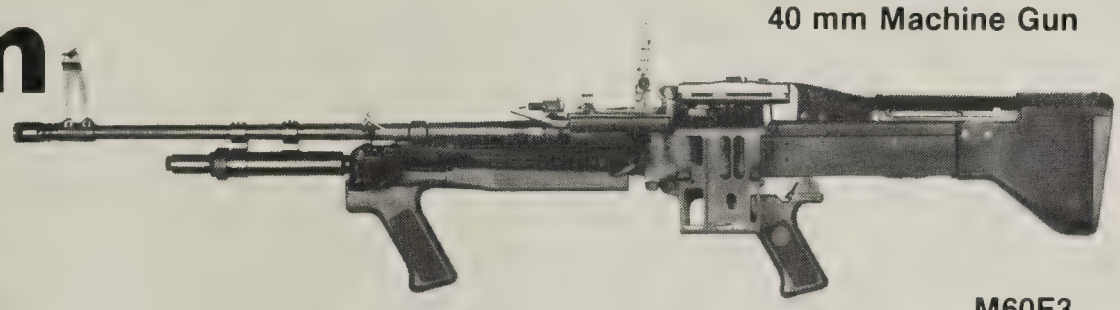


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AMC's Challenge:

Quality Products When Needed At Least Cost

The Army Materiel Command has adopted ambitious new goals for timeliness and efficiency in the development, production and fielding of weapons, equipment, spare parts and supplies—and early returns show encouraging progress.

By Gen. Richard H. Thompson
Commanding General,
U.S. Army Materiel Command

This is my second opportunity to report to you as commander of the Army Materiel Command (AMC). After more than a year on the job, I continue to be impressed with the immensity of the challenges facing AMC in fulfilling its acquisition and logistics support responsibilities.

Paramount among these challenges is providing *quality* and *effective* products to our soldiers *when needed*, at the *least possible cost* to the American taxpayer. This article will highlight some accomplishments, ongoing initiatives and future plans intended to assist in meeting these challenges.

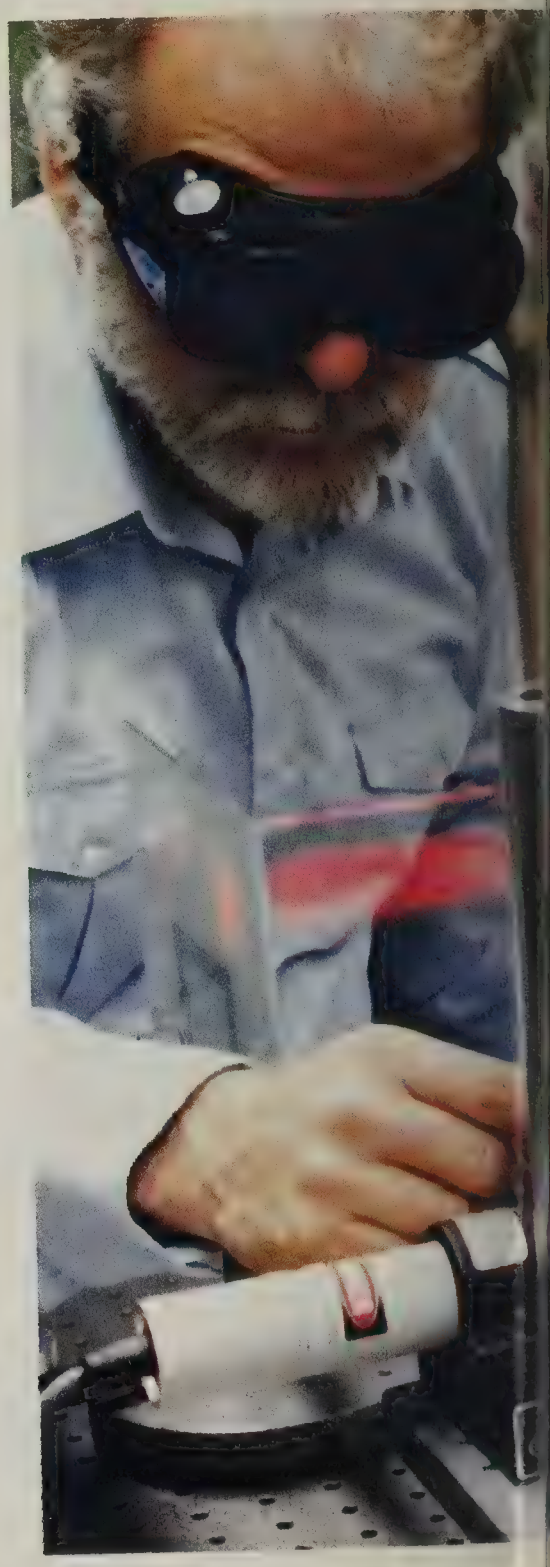
During the past year, a concerted AMC effort was undertaken to improve the effectiveness of our laboratories and research and development (R&D) centers. The respective roles of the commodity-oriented laboratories and the corporate or technology-oriented laboratories were clarified.

Commodity laboratories were transformed into full-spectrum research, development and engineering (RDE) "centers of excellence," with heavy emphasis on awareness of the private sector market, use of nondevelopmental items, and getting the most of industry's independent R&D (IR&D) programs. On the other hand, corporate laboratories will concentrate on advanced high-risk technology with potential application to several types of systems. In addition, the corporate laboratories will provide independent technical advice and R&D assessments.

A further laboratory refinement involved the establishment of a new Laboratory Command to exercise command and control over the corporate laboratories (Army Materials and Mechanics Research Center, Human Engineering Laboratory, Ballistics Research Laboratory and the Army Research Office), plus selected laboratories of the former Electronics Research and Development Command. These changes were designed to improve the quality, productivity and effectiveness of the laboratory system as well as to improve support of the Army's readiness and modernization program.

Coupling between the laboratories and RDE centers and the Army operational commands was significantly tightened with the formation of the AMC science assistance program. Senior science advisors have been assigned to the commanders of U.S. Army, Europe; Eighth U.S. Army in Korea; Western Command; Forces Command; and Southern Command.

The program provides quick-reaction technical support to the fielded forces and enhances laboratory appreciation of issues relating to reliability, maintainab



and supportability of equipment in field. Additionally, mid-level scientists engineers (S&Es) have been assigned AMC's logistics assistance offices to ng a new perspective to the analysis day-to-day readiness problems associ- l with fielded equipment.

he logistician and field maintenance anician may view a given problem in ns of the availability and distribution spare parts or quick fixes for design ciencies, but the technologist is more ly to think in terms of designing the blem out of the system by fundamen- changes in materials, system design or n conceptual approach. The science isors and S&Es in the logistics assis- ce offices will work closely together hey seek opportunities for the AMC nical community to contribute to im- ving the effectiveness of our opera- al forces.

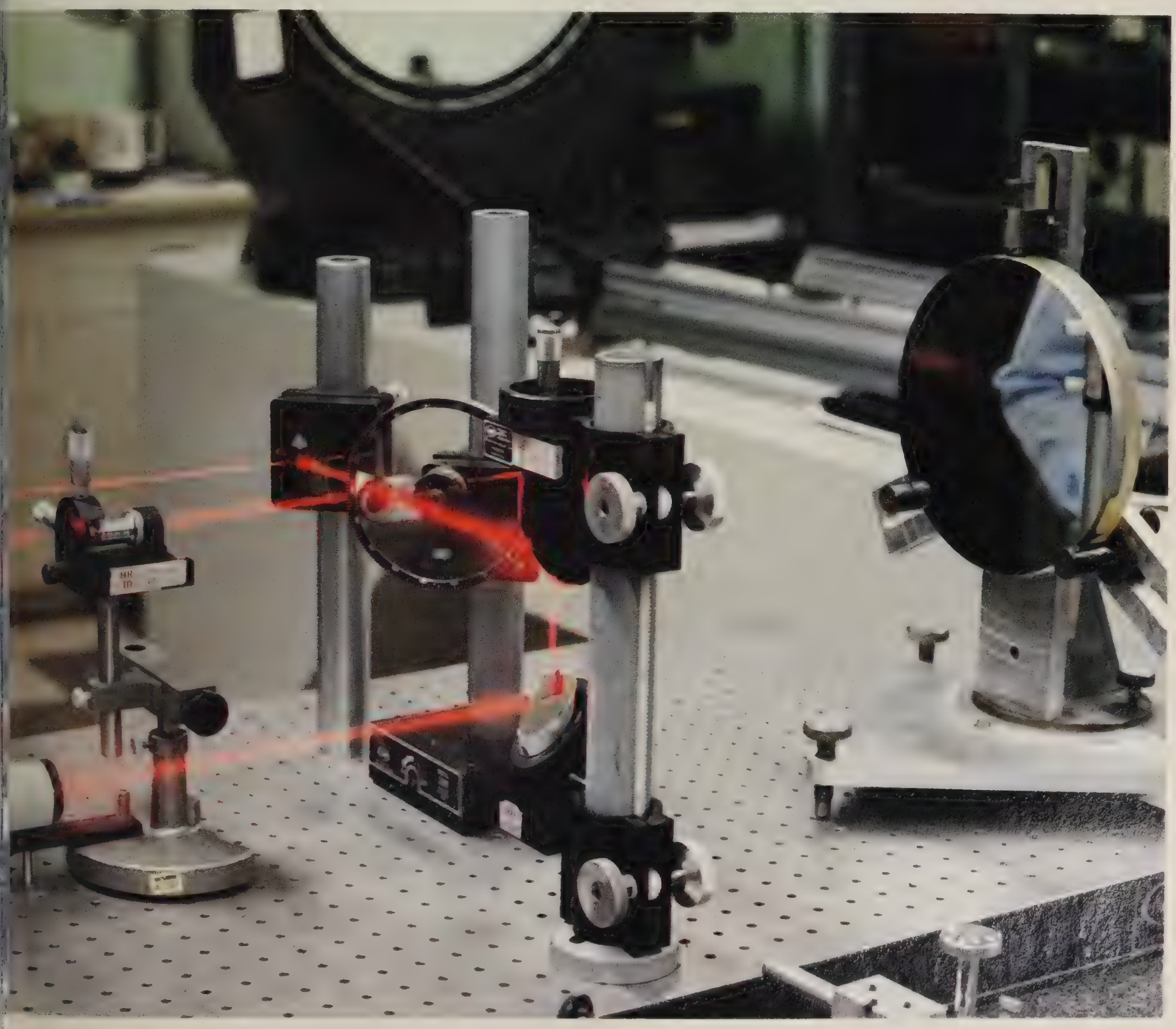
In order to better relate the R&D program to battlefield deficiencies and the mission areas defined by the Department of the Army (DA), and thus to identify and fund the Army's most critical materiel needs, the annual R&D program review process was changed to ensure that the program reflects the high-priority requirements of the user rather than the capabilities and interests of the AMC laboratories.

The new review process involves much greater participation by AMC, DA and the Training and Doctrine Command (TRADOC). It starts with AMC's development of mission area materiel plans for each of the DA mission areas. TRADOC evaluates the plans to determine if, in fact, they solve the most critical materiel deficiencies. AMC follows that with an "executability" assessment.

The results of these joint TRADOC-AMC efforts serve as the basis for setting program priorities, planning, budgeting and execution. These planning products also are distributed to industry as guides to Army research and system priorities for use in shaping their independent R&D programs.

Program instability historically has been a major contributor to cost and schedule overruns. Instability arises from uncontrolled changes in acquisition strategy,

Laboratory Command was established at Adelphi, Md., on 1 October for more effective control of the Army Materiel Command's research and development efforts: here, an Army civilian scientist studies laser beam reflections.



funding and requirements. AMC has made major strides to instill discipline into each of these three areas.

The centerpiece of our newly revised system acquisition policy is the requirement for all programs to have a comprehensive acquisition strategy, approved at the first milestone, and revalidated at each major milestone thereafter. For the first time, all programs, regardless of size, will have a documented and approved standard acquisition baseline to serve as the master blueprint for the program's entire acquisition life cycle.

This revised policy has two immediate benefits. First, managers must conduct extensive early strategic planning on all interactive functional areas that are essential to a successful acquisition program. Second, once this planning is documented and approved as an acquisition strategy, it can be changed only with approval of the original decision authority.

Execution of an acquisition strategy is only as stable as its funding and we have worked steadily to improve our program management control system (PMCS) established in 1981 to discipline the funding process for selected major systems. PMCS documentation serves as a contract between program managers, AMC headquarters (HQ) and DA on funds required to execute the approved acquisition strategy.

Changes to approved funding follow disciplined PMCS change control procedures. This does not eliminate funding changes—many external forces (Congress, Office of Management and Budget, Office of the Secretary of Defense) affect funding—but it disciplines our internal funding changes and identifies the program impact of these changes. Improvements also have been made in the system's ability to track program and budget decisions in a timely fashion, so that we keep PMCS documentation a part of the real world, not an idealized exercise.

If the underlying requirement changes, the acquisition strategy and resource requirements will likely be affected. AMC is increasing its participation in requirements generation with TRADOC's enthusiastic encouragement.

Our approach to requirements stability is twofold: first, there is a need to improve the quality of the original requirement and beat down "goldplating"—the addition of desirable but nonessential features. If we have realistic and affordable requirements, it will minimize the need for last-minute changes to accommodate technical realities.

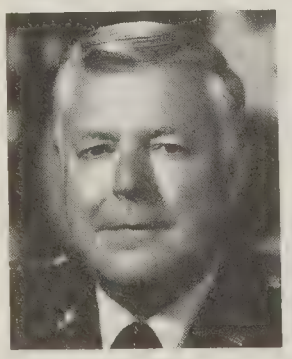
To improve requirement quality, we have instituted senior-level review boards at our commodity commands and a Materiel Acquisition Review Board at AMC HQ to scrub requirements with TRADOC participation. We also bring our laboratories into the requirement review process to tap their technical expertise and to make sure requirements are based on the technical state-of-the-art, not an undisciplined "wish list."

Second, there is an urgent need to shorten the development process in order to reduce system obsolescence brought about by changes in threat or technology.

To help alleviate this problem, AMC has undertaken a critical new initiative to improve the timeliness of the acquisition process. Our overall objective continues to be placement of operationally effective and supportable equipment in the field.



Launch of a Pershing II missile during operational testing at White Sands Missile Range, N.M.: AMC's goal of developing major systems in four years or less requires an overhaul of test and evaluation procedures.



GEN. RICHARD H. THOMPSON has commanded the Army Materiel Command (AMC) since June 1984, following a three-year tour as deputy chief of staff for logistics (DCSLOG). Gen. Thompson enlisted in the Army in 1944 and was commissioned five years later, serving overseas during World War II and the Korean War. He holds a bachelor's degree from College of the Ozarks, Ark., and a master's degree in public administration from George Washington University. He is also a graduate of the National War College and the Armed Forces Staff College. Among his previous major assignments in more than 36 years of commissioned service were: the first commanding general of the Troop Support and Aviation Materiel Readiness Command; director of logistics, plans, operations and systems, then director of supply and maintenance, both in the office of the DCSLOG; commander of the Defense Logistics Service Center and the Defense Property Disposal Service; and commander of the inventory control center, U.S. Army, Vietnam.

What has changed, however, is our ommitment to get this equipment to the oldiers when it is needed. We are doing his by emphasizing accelerated or "fast- ack" programs. We have established a our-year development goal for all new arts. A similar two-year goal has been tablished for product improvement pro- osals (PIPs) and programs that integrate roved components. The clock starts with pproval and funding at the first develop- ent milestone and stops at award of the oduction contract.

We have received the commitment of l key Army participants, which is ab- lutely vital if we are to meet these chal- nging goals. The first of 65 candidate stems proposed for the four-year devel- oment cycle is the advanced antitank eapon system-medium (AAWS-M). We lly realize there are obstacles that must overcome (some are essentially out of ir control, such as political and socio- onomic factors) so we are focusing our tention on the many internal factors at we can control.

As previously indicated, AMC and RADOC plan to pursue realistic require- nts with proved technologies. Our la- ratories and RDE centers have been assigned responsibility for demonstrating proof of the technical principles involved, preferably through troop testing. Once technological risks are reduced and requirements are stabilized, program responsibility will be transferred to a designated program manager for intensive management.

In addition to the requirements emphasis, we are taking positive steps to strengthen the early planning process for integrated logistics support (ILS), military specifications and standards, producibility engineering planning, configuration control procedures and testing methodologies.

Use of preplanned product improvements (P^3I) is our first alternative to meeting a requirement. This alternative stresses "proactive" development; that is, to plan systems for the introduction of appropriate technology at a later date. P^3I will be considered for every development program.

Also, we are placing greater emphasis on the use of nondevelopmental items (NDI). This country has the world's greatest marketplace and we would be remiss if we did not tap this vast resource. Still another NDI alternative is the consideration of foreign-built systems. International cooperative programs have been expanded over the past year.

The challenge is to change the European perception about the "two-way street" of arms trade with the United States. For example, defense industrial cooperation with Spain is a high priority and several major initiatives have been undertaken with that country. These should significantly improve Spain's ability to compete and share in the U.S. defense market and, at the same time, improve its contribution to the defense of NATO. Besides the evaluation of 15 or more Spanish products, plans have been developed to consider other proposals and to establish an in-country liaison.

Cooperation with West Germany has also been very active with the signing of air defense agreements involving the Roland and Patriot missile systems. AMC's role has been to support all negotiations and prepare production and fielding plans in support of the West German requirements for Patriot fire units. Progress has been made in the analysis of reconnaissance and target acquisition materiel for both the U.S. and West German armies.

TRADOC is developing an organiza-

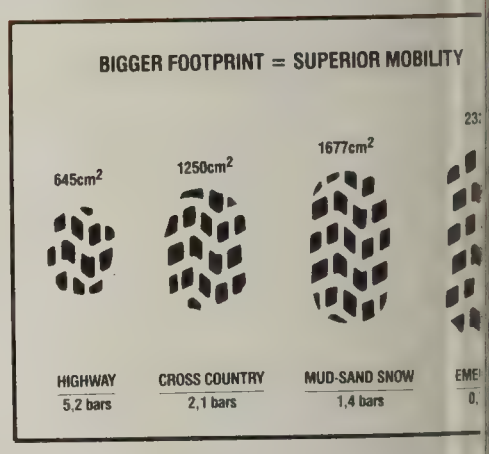


Part of TMDE (test measurement and diagnostic equipment) operations is this van-mounted calibration set, which provides 'curb-side' services for the electronic equipment of Army units in the field.



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S.E.E., H.M.M.H.E., T.E.X.S.



S.E.E. — Small Emplacement Excavator



T.E.X.S. — Tactical Explosives System

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Freightliner is now successfully demonstrating that the High Mobility Materiel Handling Equipment (H.M.M.H.E.) and Tactical Explosives System (T.E.X.S.) projects can be accomplished with the same basic tractor. This commonality in equipment, parts and service provisioning, training and worldwide support offers substantial cost savings to the military.

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tional and operational concept for a reconnaissance drone that can satisfy a deficiency in mid- to long-range reconnaissance. The West German CL289 drone is a leading candidate for that role. Interoperability of U.S. and West German command and control systems was successfully demonstrated in the fall of 1984, at Bogen, West Germany.

Signing of contracts this year for procurement of the British-designed M252 81-mm mortar is an important demonstration of commitment to the allies. The extended range and lethality of this system will greatly increase the combat power of the infantry.

Evaluation of the British L119 105-mm towed light gun is a good example of the NDI fast-track approach. If the evaluation is successful, the light force will have greatly expanded firepower at ranges in excess of 14 kilometers in less than two years.

A good example of a major in-country NDI effort is the ongoing acquisition of our new multiple subscriber equipment (MSE) communications system, with a program value of over $4.5 billion. This innovative strategy will not only save the Army $1.2 billion in R&D and procurement costs but will be fielded four to five years earlier than our classic "heel-to-toe" developmental items. This example proves that NDI is a viable acquisition strategy for major as well as minor programs.

The Army equips soldiers and soldiers are the Army's greatest resource. Thus, this nation's great capacity to develop and apply technology must be turned further towards human considerations.

Accordingly, an action plan has been completed which will assure priority consideration of manpower and personnel integration (MANPRINT) for all development systems. MANPRINT is the process of imposing human factors, manpower, personnel and training considerations on the entire materiel acquisition process. Our new materiel is superbly capable because we have exploited the newest technologies.

We will continue our efforts to develop highly capable weapon systems and, at the same time, use technology to offset undue demands on soldiers. We seek simpler soldier tasks and fewer soldiers to operate and maintain our systems. From this point forward, MANPRINT considerations will be raised in priority to that of system design.

Another related initiative is to apply



performance-oriented specifications to the maximum extent possible. Performance specifications eliminate many of the "how-to" requirements for the design, development and testing of a new system and concentrate instead on end-product requirements. By not tying contractors' hands to rigid specifications (which can increase costs), they are permitted to propose lower-cost solutions with innovative approaches.

Furthermore, the volume of paper associated with requests for proposals (RFPs) and contractor bids is reduced drastically. For example, use of performance-oriented specifications on the engine program for the LHX (light helicopter, experimental) reduced the number of RFP pages by 75 percent, from 571 to 144. Additionally, specification pages were reduced by 75 percent and the number of data items were reduced by 60 percent. Comparable paper reductions were experienced with the RFP for the AAWS-M.

To further enhance our four-year development goal, we have strengthened some former weaknesses in our test and evaluation (T&E) system. As a first step, we have established a central T&E manager at each AMC commodity command and a test information center at AMC HQ to assure continuous test and evaluation from concept exploration through production and deployment.

All T&E participants, including the contractor, are now afforded open access to all test data on a timely basis. In addition, a single integrated development test cycle (SIDTC) concept is being implemented to ensure that we make maximum use of existing test data, minimize the test cycle and reduce test costs.

While it is true that more testing provides more information for decision making, the cost of this additional inform tion may not provide an adequate retu on investment. When one sees the sar or similar tests being conducted duri contractor testing, government develo ment testing and government operatior testing, it is easy to conclude that is n smart testing. These are redundant proc of compliance and represent a waste precious resources.

In summary, we are doing a better j of T&E planning, sharing data to p clude replicate testing and optimizing u of existing test facilities, both governm and contractor sites. Also, we are ass ing the more timely correction of mate deficiencies uncovered during testing a result of increased T&E emphasis a greater visibility.

We have a major initiative under w to improve product quality. I have ma it abundantly clear that quality will ceive the same emphasis as schedule a cost throughout the materiel life cyc for it is folly to provide materiel to s diers on time and within budget if equipment fails to perform as intenc when required.

During combat, there is no time return failed materiel to a contractor depot for repair or replacement. Wl weapons fail on the battlefield, sold die and wars are lost. To improve quality of equipment provided to sold in the field, AMC is now taking agg sive action.

For example, commanders of AM major subordinate commands, techn activities, arsenals, depots and plant tivities, as well as our program manag are being more insistent that contrac and in-house operators make the Arr materiel right the first time. We exp our contractors, depots, arsenals and



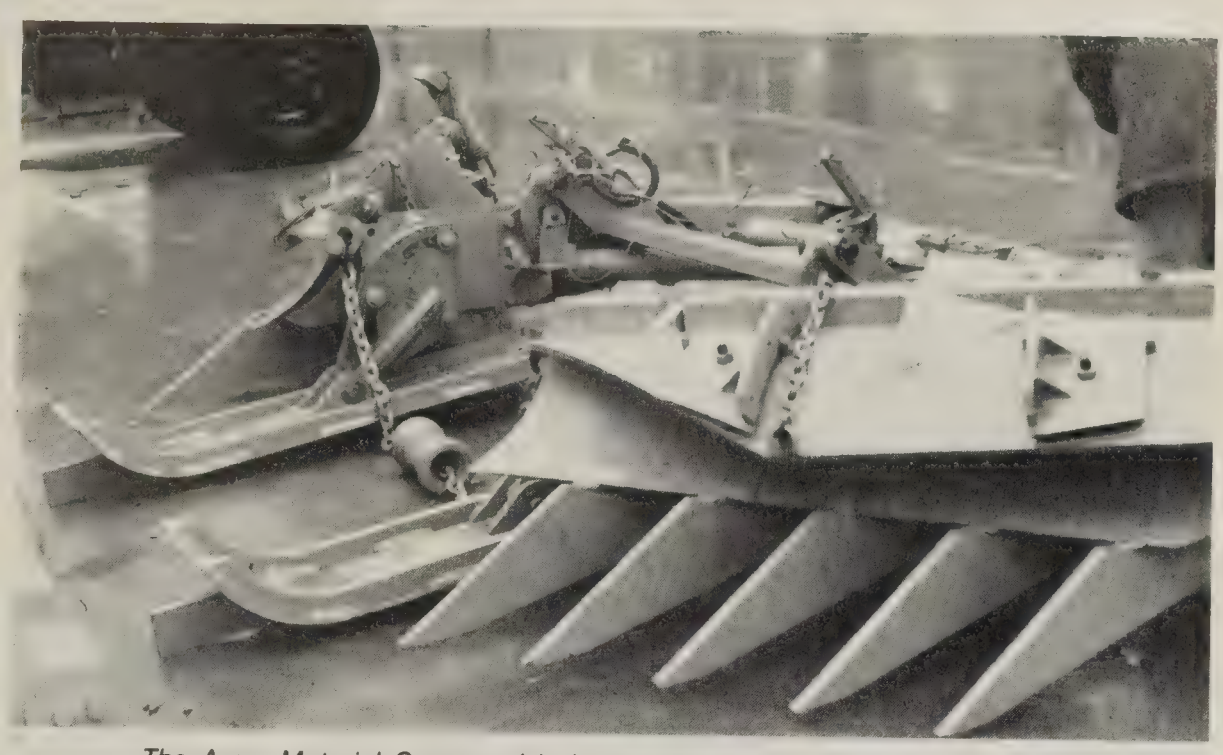
This architect's rendering shows new facilities scheduled to open at New Cumberland Army Depot, Pa., at the end of 1988. Similar construction is under way at the Army's other geographically oriented supply distribution depots (Red River Army Depot, Tex., and Sharpe Army Depot, Calif.), to replace outmoded plants, increasing productivity and mobilization capacity.

e plant activities to measure, reduce eport scrapping and rework activities. e are demanding strict compliance all legitimate technical and quality rements by contractors and in-house ufacturing and overhaul operations. are making it tougher to obtain apal for waivers to and deviations from requirements.

nen materiel is made right the first scrapping and rework are elimi-, productivity is increased, costs ecreased and timely delivery of qualquipment to soldiers in the field is ved. All this, in turn, increases read- These efforts have already produced ive results. For example, during a onth period one of our major conrs reduced rework hours per equivunit on the M1 tank program by 60 nt.

ntractors are liable for defective ma-. When a warranty is involved, we it. If there is no warranty, our purng offices and program managers nd that the contractor stand behind oduct and voluntarily repair or rethe defective items at no cost to the nment, or provide reimbursement. ough AMC's deficiency reporting n, we are tracking performance of ibordinate purchasing offices in holdntractors liable for defective nonnted materiel. In a recent quarterly , we were successful over 71 perof the time in holding contractors for deficiencies found after governacceptance. That is not bad, but ill do better.

ing initial production, product qualnagers of our commodity commands perform a joint quality system re- (QSR) with government contract istration in-plant quality assurance



The Army Materiel Command is buying this track-width mine plow from Israel for use on M1- and M60-series main battle tanks.

personnel. These reviews are conducted when items make the transition from development to production or when a new contractor produces an item for the first time.

These hardware-oriented reviews at the contractor's plant are conducted to prevent, expose and resolve problems before nonconforming supplies are produced in volume. The QSRs concentrate on the contractor's processes, manufacturing and inspection equipment, personnel skills and certification, vendor quality control efforts and both the contractor's and government's in-plant quality program and inspection systems.

Commanders and program managers of the AMC purchasing office are now ensuring that progress payments to contractors are properly supervised and administered in accordance with the federal acquisition regulation. Progress payments are reduced or suspended when contractors do not comply with contractual quality and technical requirements.

These commanders and managers also are ensuring that procedures are implemented to prevent the award of contracts to contractors with poor quality performance histories. Likewise, we are encouraging and recognizing good contractor performance.

In addition to contractor quality emphasis, many initiatives are under way to improve in-house quality. For example, laboratory testing associated with the ammunition and chemical stockpile reliability programs has been expanded to provide greater safeguards and assurances that the stockpiles are in fact safe and reliable. We have also simplified and strengthened our program for quality deficiency reporting and equipment improvement recommendations, including audits on the quality and timeliness of problem resolution and responses by appropriate AMC activities.

During 1982, a group of technical and management experts chaired by Gen. Walter T. Kerwin Jr., U.S. Army, retired, conducted an independent review of AMC's product assurance programs. The group emphasized the munitions areas because of quality problems being experienced at the time in ammunition and missile production. Implementation since that time of many of the study group's recommendations has resulted in substantial improvements to AMC's product assurance system

Although product quality is now receiving high-level visibility and support throughout AMC, there is ample evidence

that we still have significant materiel quality problems. Accordingly, I chartered Gen. Kerwin to conduct a follow-on review of AMC's quality programs and to focus on the remaining materiel commodities—aviation, automotive, electronics and troop support. Additional AMC quality enhancements are anticipated from this effort.

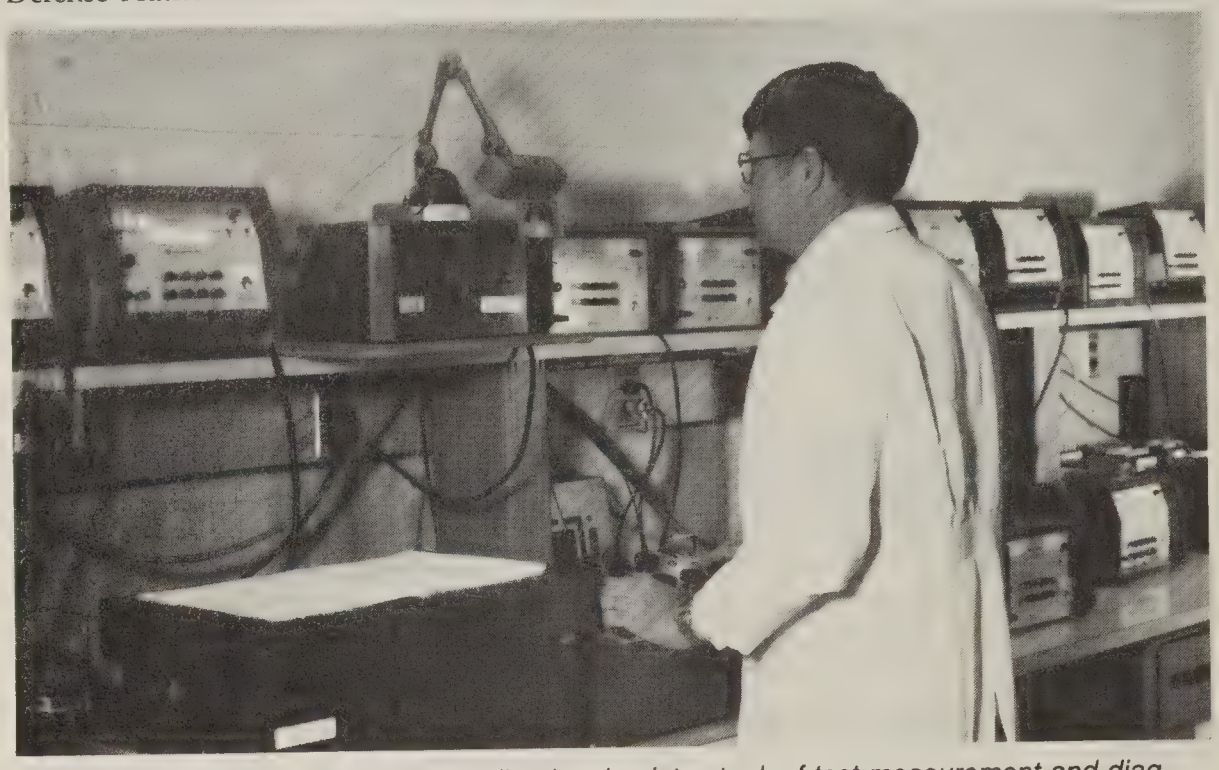
Congressional concern over acquisition of quality products is evidenced by the warranty provisions of the fiscal 1985 Defense Authorization Act, which became effective on 1 January. The new law has increased significantly the impact of warranties on the Army logistics system. A plan for administering the expanded materiel warranty program was developed and is currently in the process of implementation.

A primary objective of the plan is to ensure that warranties impose no additional work load on using units or at intermediate direct-support levels, with no requirement for record keeping or other burdensome tasks associated with warranty management. Instead, warranty actions are limited to the maintenance activities of intermediate general-support levels, directors of industrial operations (DIO) and depots.

Warranty claims are submitted by any of these organizations to the appropriate AMC commodity command. These commands are responsible for the lion's share of the work, both in acquiring the warranty and relevant data and in handling claims activity for repair and reimbursement. In addition to designation of a single office at each AMC commodity command to handle all warranty communications, a centralized data base has been established at the AMC Materiel Readiness Support Activity (MRSA) for the purpose of developing an Army-wide warranty information program.

The MRSA data base produces such products as periodic listings of warranty control offices and points of contact, listings of items under warranty, a quarterly newsletter which focuses on current events and lessons learned, and an annual claims summary to alert Army major commands to problem areas and new warranty items coming into the inventory.

Also, we are insisting on uniformity of warranties by acquiring standardized warranty data, using standard formats for warranty technical bulletins and materiel fielding plans, and by banning the use of forms unique to a particular contract. In summary, I feel we are off to a good start in implementing and managing the new warranty law. The impact would have been considerably greater had the Army not been experienced in the use of equipment warranties for a number of years.



Army Materiel Command is upgrading its obsolete stock of test measurement and diagnostic equipment (TMDE), which is vital to scientific and maintenance work: the civilian technician pictured here is at work in the Primary Standards Laboratory of the Army TMDE Support Group, Redstone Arsenal, Ala.

Maximum benefit of the funds entrusted to AMC are realized for our taxpayers' dollars only when we receive a dollar's value for a dollar spent. The dollar-for-dollar value is as important to successful operations in government as it is in industry. To achieve this equal value, we must assure victory over cost.

In the corporate world, everyone kno what profit is, but the definition of pro for AMC is somewhat more difficu Profit for AMC is identifying ways avoid future costs; finding ways to redu the cost of the materiel we are buyi achieving increased readiness for the Ar without asking Congress for more mon and providing to our soldiers a qual item on time, within or under cost.

Our value engineering (VE) progr has a major role to play in the effect stewardship of the taxpayer's dollar a in generating this profit for the gove ment. VE is the primary AMC progr which identifies savings and cost avo ances. The savings and cost avoidan achieved provide opportunities to s money to unfinanced requirements thro reprogramming. To me, this is profi

A key element in the equation is t if there is no reprogramming of the m ey, we really have not achieved increa readiness at reduced costs. To maxim its full potential, VE has been declare priority program. Our fiscal 1985 g was to increase readiness by saving percent of our total obligational buc authority through VE actions.

During fiscal 1984, AMC saved $31 million through approved contractor-s mitted VE change proposals (VEPs). M of these approved proposals resulte improved readiness for the Army with additional funding. Some examples accomplishments are:

- A VEP resulted in changing the m od of protecting the interior of the M50 eight-inch artillery projectile from rosion, saving $3.91 per projectile. resultant total savings of $1,054,660 reprogrammed to procure additional munition.
- A VEP precluded destruction of M60 and M85 machine guns when receivers had to be scrapped during o haul. As a result of the proposal, de are authorized to replace nonrepair receivers. Thus, the weapons are not from the inventory, saving $2,644, This dollar amount was reprogram to procure additional weapons.
- VE resulted in the developmer a process to reclaim M174 howitzer r mounts. Previously the mount wa placed, rather than repaired, at a co $121,347 each. The mount can no repaired for $13,634. Sixty-six of mounts were reclaimed during fiscal with a resultant savings of $7,109,
- A VEP resulted in the develop of a procedure to resize the nozzle T-55 helicopter turbine engines to

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duce a predictable airflow. Previous methods of adjusting the airflow characteristics of the nozzles caused damage to the coating of the nozzles' vanes. The new procedure allows for this adjustment without damage to the vanes, which are now cleaned and recoated to acceptable specifications. The adoption of the new procedures resulted in a savings of $1,209,954.

■ Another proposal improved the overhaul procedure for T-53 first-stage gas turbine engine nozzles, resulting in a savings of $773,884. Ninety percent of previously rejected T-53 coated turbine blades are being returned to service, at a savings of $1,075,133, as a result of a proposal for refinishing damaged coating.

■ Two hundred AN/ARC-114A airborne radio receiver-transmitters have been placed in service at a cost avoidance of $4,348,000. As a result of a VEP, updated parts and components and in-house electronics repair capability was used to modify these first production models for $3,000 each. Another VEP resulted in a procedure for reclaiming unusable T142 tank tracks and parts. Now, these tracks and parts are being reclaimed for an annual savings of $5,003,000. VE by AMC personnel during development of the acquisition plan for a joint crisis management capability (JCMC) (a project now managed by the Air Force) will result in an estimated cost avoidance of almost $45 million.

Although fiscal 1984 was a banner VE year, greater savings are anticipated when fiscal 1985 actions are tallied. For fiscal 1986, we have set our sights even higher with a projected savings goal of 1.5 percent of the total obligational authority.

In last year's *Green Book* article, I highlighted features of our spare-parts review initiatives (SPRINT) which were undertaken to assure that prices paid for spare parts are both fair and reasonable. In this article, I will detail some of the accomplishments which have resulted from SPRINT and other management reforms. A cost-benefit analysis identified over $180 million in net savings during fiscal 1984 which resulted directly from these reforms.

To put these savings in perspective, the Army's fiscal 1984 spares budget, which AMC executes, was over $6 billion (same for fiscal 1985), which equates to the expenditure of $707,000 per hour, every hour of every day, on spare-parts purchases. That amount was used to purchase initial or replenishment stocks (involving some 581,000 purchase documents) for a spare-parts inventory of over 354,000 items. Following are some sample benefits thus far realized from the Army's spare-parts reform program:

■ We discovered that use of an approved pricing technique (which allows the contractor to begin production before a final price was agreed upon) had increased significantly over the past few years. We found that the time required to establish prices for these unpriced instruments was also increasing.

Feeling that this lack of discipline had the potential for needlessly inflating the cost of the parts we buy, AMC moved dramatically to curtail the use of unpriced instruments and set about reducing the inventory of such contracts. During fiscal 1984, the number of unpriced contracts—valued at a total of more than a billion dollars—was reduced by 69 percent. While unpriced instruments are still being used, their use is carefully controlled, based on urgency of need and consistency with good business practices.

■ Sometimes a case of overpricing may slip through our system, but our contractors also are well aware by now of the publicity these cases receive and of the adverse effect this may have on their image in the business world. They want to avoid this as much as we do. Accordingly, we have made it perfectly clear that if a case of overpricing does get by, we will not hesitate to ask for and demand —if we have the legal right—refunds on that item. During fiscal 1984, the Army requested and received over $500,000 in refunds on items identified as overpriced.

■ We hear a lot about competition these days. Competition in the mark place is credited for innovative ideas, contributing to the vibrance of the A ican economy and, in the case of p chases made by the military services, controlling costs. AMC subscribes to a fully supports competition when it ma sense and has made significant progr in increasing the percentage of items buys through competition.

For example, we increased the to dollars spent competitively on spare pa from 45 percent in fiscal 1982 to 51 p cent in fiscal 1984. Our goal for fi 1985 was raised to 55 percent and we confident this more optimistic goal be met when all returns are in.



A Canadair CL-289 drone is launched from its truck mount: the Army is considering this jet-powered vehicle—a joint development by West German, Canadian and French firms—as a candidate for mid- to long-range battlefield reconnaissance roles.

■ A primary means for increasing c petition is our so-called "breakout" gram. Breakout is a procedure for cr ing a competitive environment by id fying and eliminating impediments competition. It provides for the scree of all items in the inventory and as probing questions about the produc of each one. Our experience has sh that dealing with the actual manufa er rather than a prime contractor re in savings of 15 percent, on the aver and open competition results in a 22 cent savings. Although breakout ha ready yielded substantial savings, we not stopping there. We are exploring to provide incentives to contractor participate in the program.

A good example of this can be foun the LHX program. The RFP for the 10 LHX helicopter engines to be bought the next ten years will provide for



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omorrow is taking shape at a company called TRW.

TRW Electronic Systems Group

TRW Inc., 1985

petitive procurement of the majority of, or possibly all, engine spare parts. The LHX will serve as a model aviation program, if not a model Army program, because of its high visibility and innovative approaches to increasing competition.

■ An active employee awareness program within AMC has brought home the importance of concern over the prices we pay for spare parts. This program involves a variety of publicity campaigns at our procurement commands such as special pamphlets, posters and engraved coffee mugs. Of course, posters and coffee mugs do not guarantee an effective program, but AMC has made a major commitment to selling the work force on the importance of discipline in pricing; of being involved; and of giving that second effort to ensure that the prices paid are fair, reasonable and related to the intrinsic value of the item.

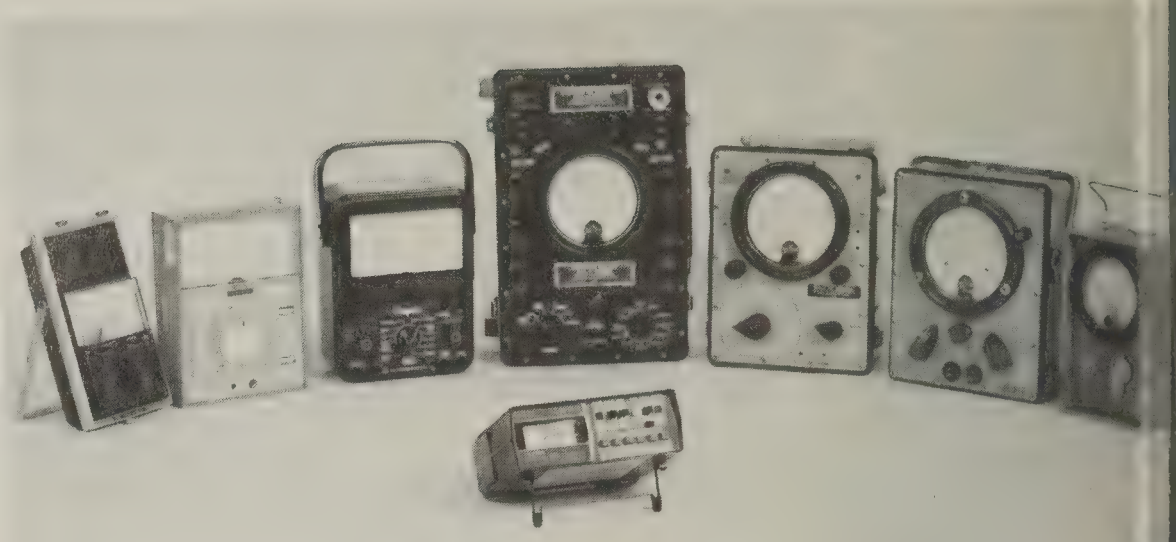
■ Another people-related initiative involves the development of challenging performance standards for spare-parts managers, including incentives for ensuring fair and reasonable pricing of spare parts. Also, we are making good strides in recognizing and rewarding our employees for cost savings and other management innovations. We presented 299 cash awards in fiscal 1984, averaging $750 each. The savings to the government amounted to $2.3 million, against a payout thus totaling only $224,000 dollars.

These benefits represent sample accomplishments realized during the first phase of a long-range program to increase the effectiveness of the spare-parts acquisition process. The second phase, which began earlier this year, institutionalizes lessons learned, strengthens the initiatives discussed here and many others, and implements a program of reform directed toward giving more attention to price credibility earlier in the acquisition process.

To summarize the spare-parts reform effort, we in AMC are totally committed to doing a better job, but we cannot succeed in our efforts without the help of the business community. We need industry's continuing cooperation as we institute and implement new policies and procedures.

In my view, the Army and the defense industry have a right to be proud of what has been accomplished in a relatively short period of time. We have created and sustained an improved competitive environment in our procurements..

Yet, in our business planning, we have not lost sight of the fact that it is our duty to provide our soldiers with the necessary tools to carry out their mission confidently and successfully. To this end, we will continue to seek rugged and reliable weapons systems, equipment and spares that will hold up and continue performing even under the most adverse conditions.



AMC's TMDE (test measurement and diagnostic equipment) modernization effort also seeks to reduce the vast array of makes and models in use: the AN/PMS-45 multipurpose meter (foreground) *replaces the other seven models shown, plus 16 others.*

While our goal is to obtain fair value for every defense dollar spent, it is really more than that. Ensuring fair and reasonable prices is a worthwhile goal but to waste precious and scarce defense dollars is to risk undercutting the public's confidence in our stewardship of their security. That is the ultimate sin we are determined never to commit intentionally.

At present, AMC's three area-oriented depots (AODs) (New Cumberland, Pa., Sharpe, Calif., and Red River, Tex.) are operating at or near two shifts in many critical functional areas to accommodate the peacetime mission workload. By 1990, we will need nearly three shifts to keep pace with the projected work load. This leaves very little flexibility for response to emergency or mobilization requirements.

To cope with this situation, we plan to construct new state-of-the-art facilities at each AOD site that will process the average 1990 peacetime work load during one shift, leaving the second and third shifts for "surges," emergencies and mobilization. We are modernizing not only because of mission growth and lack of capacity, but also because our present facilities average 38 years of age and were built for the distribution technology of the 1940s.

A tremendous return on investment from these projects in terms of time and dollars is expected. The benefits are numerous: improved productivity, reduced operation and maintenance costs, commonality of operation, energy efficiency, and increased surge and mobilization capacity. Cost estimates for this modernization effort are approximately $416 million. Through this investment, we w attain a high level of performance wholesale supply for the modern Arm will amortize our investment in four six years; and will avoid the need to h some 1,300 people who would have be required had AOD modernization n been undertaken.

Another major AMC objective is improve the entire life cycle of depot ma tenance from requirements determinati through program execution. The mark increase in the depot maintenance of equ ment now being introduced, coupled w the continuing requirement to maint the existing inventory, presents the Ar and AMC with an affordability challen

To improve the stewardship of resources, AMC has initiated a num of improvements which are necessary the increased efficiency and effectiven of the maintenance program at redu costs. Implementation of the aircraft a combat vehicle condition evaluation p grams (which ensure that only qualif maintenance candidates are returned the depot system) has dramatically redu the numbers of these major end ite needing depot maintenance.

Pricing improvements are also un way. An example is the use of cost cur —based on actual experience—for ite entering depot maintenance for the f time. The cost curves replace the that major overhaul should cost abou percent of the original acquisition c which overstates funding requiremen

For the first time, our fiscal 1987 five-year PARR (program analysis resources review) submission to DA



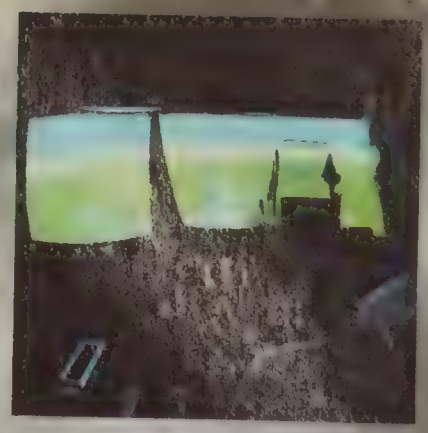
MILAN:
Anti-Tank missile system for use by the infantry.



ROLAND:
Guided missile system mounted on a shelter for use against low-flying aircraft.



MW-1:
Multipurpose weapon system to be used on the Tornado.



CGIVS:
Computer-generated image visual system for the Tornado training simulator.

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MILAN and HOT: Anti-Tank missile systems of medium and long ranges, respectively.*
ROLAND: Surface-to-air missile system for use against low-flying aircraft.*
MW-1: Conventional multi-purpose weapon for anti-tank defense and against enemy airfields.
KORMORAN: Air-to-ship guided missile.
CGIVS: Computer-generated image visual system.

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include the use of these learning curves for selected weapon systems. While limited in initial application, the program will be expanded for subsequent PARRs. In the area of program execution, a number of improvements are either under way or in the planning phase. These include improvements in industrial fund pricing, management of depot maintenance by production as well as induction and controlling the level of funding carried over from one budget year to the next.

With the establishment of the AMC Maintenance Board in 1984, a mechanism is in place to analyze and recommend solutions to significant maintenance, supply and support problems. Early actions include the standardization of the methodology for analyzing the needed level of repairs for use in estimating depot maintenance costs. The Board operates as a forum not only to review and develop solutions to problems but quickly disseminate good ideas commandwide.

Commencing in 1979, the Army began moving towards central management of all test measurement and diagnostic equipment (TMDE) support under AMC to ensure peacetime readiness while providing a smooth transition to wartime support. The U.S. Army TMDE Support Group (USATSG) was established as the central management for TMDE calibration and repair. Today, all TMDE support missions and resources of all Army major commands (except the Office of the Surgeon General) are under the command and control of the USATSG, which is responsible for more than 625,000 items of TMDE worldwide.

A major benefit of the central management of TMDE support has been the ability to compile and assess detailed requirements and performance data, and to apply this data on a timely basis to manage resources. This has led to optimum use of available resources and major reductions in planned wartime personnel and equipment requirements. A measure of the effectiveness of the current program is that the overall availability rate of TMDE to the customers is greater than 97 percent.

Although we are experiencing excellent TMDE availability rates and have established an effective TMDE organization and management structure, much remains to be done in modernizing the TMDE inventory. There are presently over 50,000 makes and models of TMDE in the Army inventory, many of which are outmoded.

In an attempt to remedy this condition with state-of-the-art equipment, we have an aggressive modernization program under way which is proceeding on schedule with some very favorable results. Of course, the magnitude of the effort mandates accomplishing it in phases. We are starting with 4,400 widely used items, consisting of 2,500 related to electronics and 1,900 associated with other commodities.

The objective for the electronics commodity area is to replace the 2,500 makes and models with just 60 items. During 1984, 17 new state-of-the-art commercial off-the-shelf items were fielded as replacements for over 400 of the older models. This effort was particularly successful in terms of product quality and cost savings.

For example, the AN/USM-488 oscilloscope program and the SG-1219 signal generator program together represent a savings of over $17 million; in both case the actual unit cost to the governme was less than half of the commercial l price. This savings was achieved by larg scale centralized procurement and ma mum competition.

One of the most visible examples modernization was the replacement of pieces of old test equipment with or six multipurpose pieces in the milita intelligence battalion of the 9th Infan Division (Motorized). In addition to t quantity reduction, there was a signi cant size and weight savings which su stantially increased the battalion's mo ity and survivability in the field.

For example, support generator po was reduced from ten to three kilowa shelter size from 2½ to 1½ tons; truck weight from 2½ to 1¼ tons. T ambitious but necessary TMDE mode zation program will not only moder the inventory but will result in saving over $3 billion during the next 15 to years, provided, of course, that our vestment plans are supported.

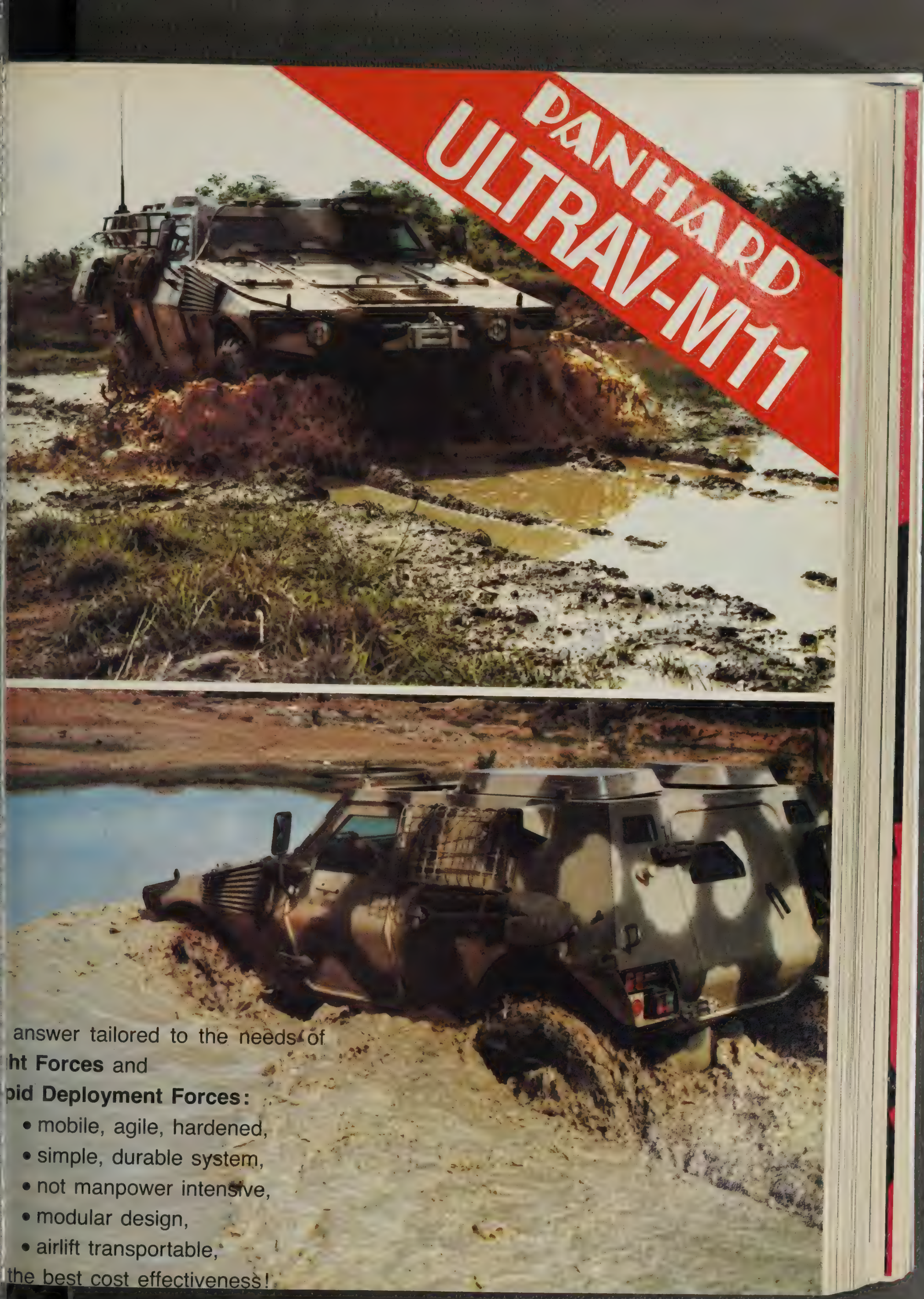
AMC's resource self-help/affordab planning effort (Reshape) was launc in April 1980 as an innovative solu to filling the gap between work load manpower resources by increasing ductivity. Reshape has now become AM permanent "umbrella" management gram, providing the vital means to commodate the work load burden f by AMC. AMC policy—and the fu mental incentive of Reshape—is that ings originating in commands remain them for reapplication to unfunded h priority requirements.

The challenge for fiscal 1985 wa develop a useful and meaningful me



The Army is evaluating the British 105-mm towed light gun as possible armament for the new light infantry divisions, an example of the service's willingness to consider foreign weapons.

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nism to accurately track hard dollar savings throughout the command and clearly indicate how these savings are being reapplied against priority requirements. All related Defense Department and Army programs were integrated within the Reshape productivity capital investment program to maximize funding opportunities for the command, reduce confusion, and provide economies in funding and executing projects.

The purpose of the program is to reduce operating costs through timely investments for capital tools, equipment and facilities. For fiscal 1985, AMC was able to fund $20.1 million in documented productivity-enhancing projects that will realize long-term savings of more than $209 million.

To provide an additional capability to meet AMC's increasing education needs, a remote multimedia mode (RM^3) education network was inaugurated in January at the Army Logistics Management Center (ALMC). RM^3 is a satellite-based system which provides simultaneous training at multiple installations through live satellite television retransmission, with two-way audio hookup via a wide-area telephone service and commercial telephone.

This system is a cost-effective way of expanding training capacity at the student's home station without a loss of training quality. Annual savings are estimated at $350,000 from reduced outlays for *per diem* subsistence, travel and salaries.



AMC is streamlining its test and evaluation procedures: test-firing of a Patriot air defense missile at White Sands Missile Range, N.M.



Test-firing an MLRS (multiple-launch rocket system) artillery rocket at White Sands Missile Range, N.M. MLRS greatly adds to the volume of fire generated by conventional artillery and an extended-range version is a candidate for the divisional 'deep attack' role (out to 70 kilometers).

Subject matter assessments (SMAs) constitute an AMC initiative for implementing the Army performance-oriented review and standards program. SMAs are comprehensive analyses and evaluations designed to develop the most efficient and effective processes and organizational structures, which are then standardized throughout AMC. By the end of fiscal 1987, approximately 90 percent of AMC's total acquisition and logistics functions will have been studied.

Three assessments thus far have been completed: acquisition and procurement, administrative lead time, and spare-parts budget management and cataloging. Application of standard operating procedures, plus the many other enhancements realized in these functional areas, have resulted in projected savings of almost $100 million. Twelve additional assessments were scheduled for completion during fiscal 1985.

Following two years of intensive effort, AMC has developed its first strategic long-range plan to serve as a "road ma in guiding the command toward the po ture required to perform its mission the 21st century. The plan takes cogn zance of political, military and econom projections for the timeframe but is su ficiently flexible to adjust to inaccuraci that are inherent in long-range predictin

For this reason, the plan will be a "li ing document" and will serve as a ma agement tool for all levels of the co mand. It will be published in loose-le format as a constant reminder of its i herent flexibility for adjustment to reali Distribution of the plan is expected to accomplished during the first quarter fiscal 1986.

We have undertaken a series of ad tional initiatives to further improve o relationships with industry. I am a fi believer that our industry partners mu have a full understanding of our manag ment improvement efforts if we are expect them to do their part in produci the equipment the Army badly nee For some time, we have participated a myriad of joint Army-industry meetin and conferences hosted by a number different organizations and societies.

Paramount among these are our vance-planning briefings to indus (APBI), which are designed to prov current and definitive information c cerning our long-range plans, policies a programs in support of future milit requirements. The APBIs are organi along commodity lines and conducted AMC's R&D activities and their TI DOC counterparts.

To enhance the utility of the briefin their frequency has been increased fr once every three years to annually. addition, the format of APBIs has b changed to provide for a more com hensive two-way exchange—indus representatives will be given equal t to respond to our briefings when p sented. This format change not only g industry a more active role in the p ning process but also will enable A to utilize industry's views much earlie the materiel life cycle, thus contribu to our four-year development goal.

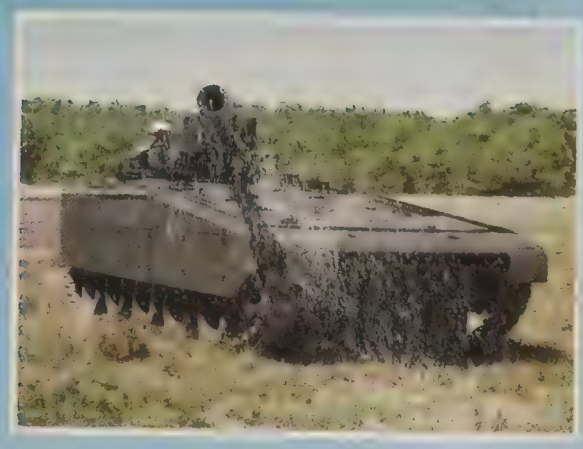
To foster better communications understanding between the corporate s of industry and AMC, I hosted a se of five "contractor day" meetings du the past year with representatives o defense and aerospace firms. These sc what smaller gatherings have prov an excellent forum for sharing our mu challenges and concerns and I pla hold additional ones in the future.

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The Teledyne AGS team approach capitalizes on existing production facilities and experience . . . for complete details write Vice President, International Marketing.





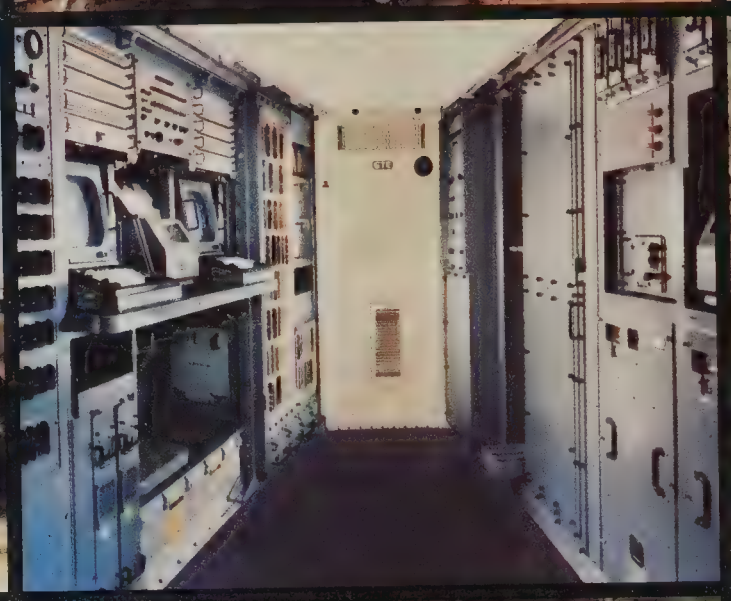


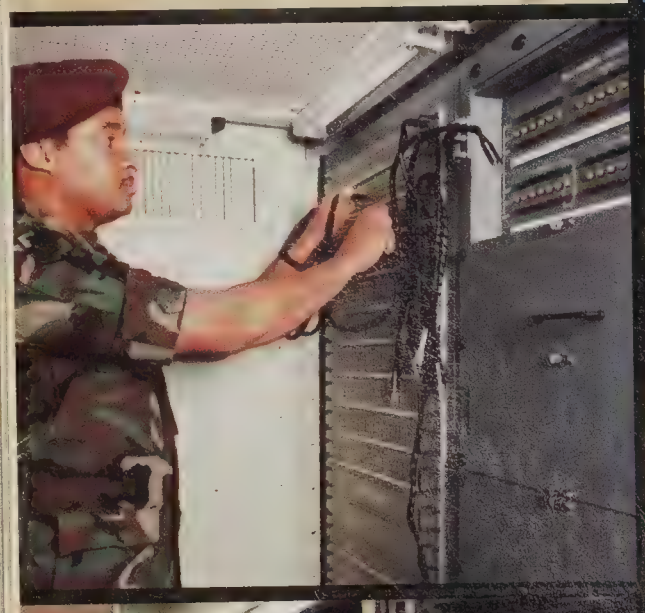
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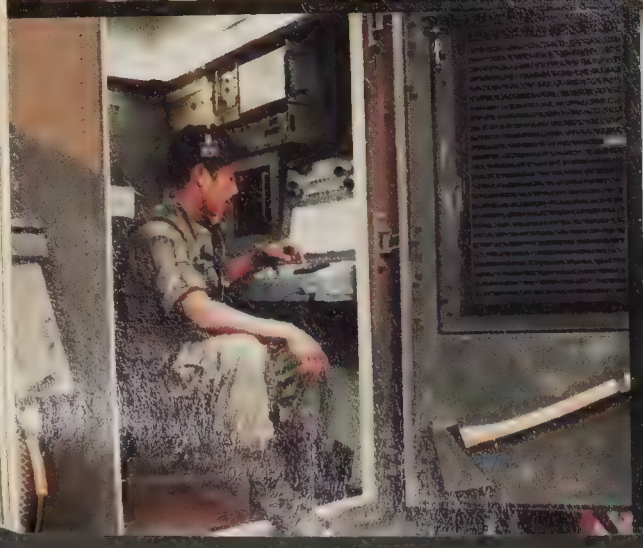
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hat's what we're doing with the AN/TTC-39 and AN/TYC-39. We're upgrading and ıcreasing the flexibility of these field-proven circuit and message switches and apitalizing on the investment that has already been made in training and logistics upport.

ircuit switch upgrades

low the AN/TTC-39 is a family of four that can satisfy all service requirements – with ıcreased capability, higher reliability and mobility, lower costs and weights, and less ower. For example, the easier-to-use AN/TTC-39A offers – in a single shelter – a new ɔmputer, more multiplexing, and nodal management functions.

AN/TTC-39 CAPACITY COMPARISON

	AN/TTC-39 (S-280)	AN/TTC-39A (S-280)	AN/TTC-39B (S-250)	AN/TTC-39C (S-250)
ɔtal external lines	390	744	408	180
nalog lines (max)	240	96	96	60
igital lines (max)	150	648	300	180
igital single channels	60	144	96	96
ɔtal analog and digital ngle channels	300	240	144	96
igital transmission groups	4	30	15	7
EDs	4	15	6	6

essage switch upgrades

ıe AN/TYC-39 is also expanding into a family of switches that can be packaged in -250, S-280, and fixed configurations. The more flexible TYC-39A, through new chnology and minor software changes, will be able to satisfy the requirements of the odular Tactical Communication Center (MTCC). It will provide message origination, ocessing, editing, composition, distribution, routing, switching and delivery.

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By Gen. Glenn K. Otis
Commander in Chief, U.S. Army, Europe,
and Seventh U.S. Army
and
Maj. Dewey A. Browder

The U.S. Army's theme for 1985—the "Year of Leadership"—builds on the achievements of previous Army themes: spirit, fitness, excellence and family. The year of leadership provides an excellent opportunity to focus on the leaders and their responsibilities at all levels. As in past years, this theme has set the stage for a better understanding of the challenges of both today and tomorrow.

The identification of leadership as an area deserving special attention does not, however, suggest a paucity of leadership skills in this most important function of the military discipline. In fact, the contrary is true. Our Army can point with pride to 40 consecutive years of peace in Europe because we have had 40 years of standing guard, training, readiness and, as a consequence, deterrence.

We have not achieved this unprecedented feat alone; without the other U.S. services and our allied partners in peace, it very likely would have been an impossible task. The U.S. Army has always had a prominent role in protecting our common values and liberties, however, and that situation continues today. During those 40 years, we have had both lean times and times of plenty. In spite of the ups and downs, we have consistently preserved peace with freedom.

The spirit of the 1985 theme is producing, in effect, an Army-wide seminar on leadership. Consistent with this thought-provoking process, a large number of articles and speeches have appeared which serve to instruct and spire. These philosophical thoughts leadership are invaluable, and the dictu of 1985 will provide leaders with a ro map to success in the future.

The way a philosophy of leadership expressed is a personal matter, howev it depends to a degree on backgrou the level of enthusiasm and the amo of responsibility. Nevertheless, it see to us in U.S. Army, Europe (USAREU that it boils down to the fact that of us are led while some of us are a leaders. Those of us who lead have a model for our conduct the standards expect from our own leaders. This con tion pertains whenever a superior-sub dinate relationship exists. It is not j limited to situations involv "green-tab" personnel. U.S. Army, rope, offers most challe



; leadership climate in the military to-
y. This situation exists because we are
: only sitting on the forward edge of
edom, where the deterrence of war is
: mission, but we are also in the midst
a major upgrading of our forces.
Actually, these two challenges are in-
arable. USAREUR's ability to accom-
sh its mission rests on three pillars—
)ple, equipment and training—with
dership as the key factor in tying them
together.
One of the most important issues in
people area is that of quality of life.
: past year has seen considerable prog-
; in fixing the places where we live,
rk and play.
.arger numbers of soldiers are now
rking in clean, modern maintenance
lities and motor pools, thanks to the
lities modernization program. Reno-
on of troop billets and family hous-
continues at a rapid pace, and morale,
welfare and recreation (MWR) facilities have been the recipients of significant resources.

Figures showing the improvements to the physical side of quality of life are impressive: 108 maintenance facilities have either been upgraded or are scheduled for renovation; billets for over 14,000 soldiers have been completed or are in progress; 7,500 units of family housing have been renovated or are undergoing renovation; and $45 million has been spent in improving the MWR capital support base. Visitors who last saw USAREUR in the 1970s have been stunned at the progress that has been made.

Unfortunately, we have not yet reached the ideal in regard to quality of life because significant shortcomings still exist. Ninety-eight USAREUR combat units still have to park their vehicles in unpaved motor pools. Billeting space for 7,000 troops awaits renovation, and 32,000 of our family housing units require repairs. Even more significantly, we have a net deficit of 10,200 of these units.

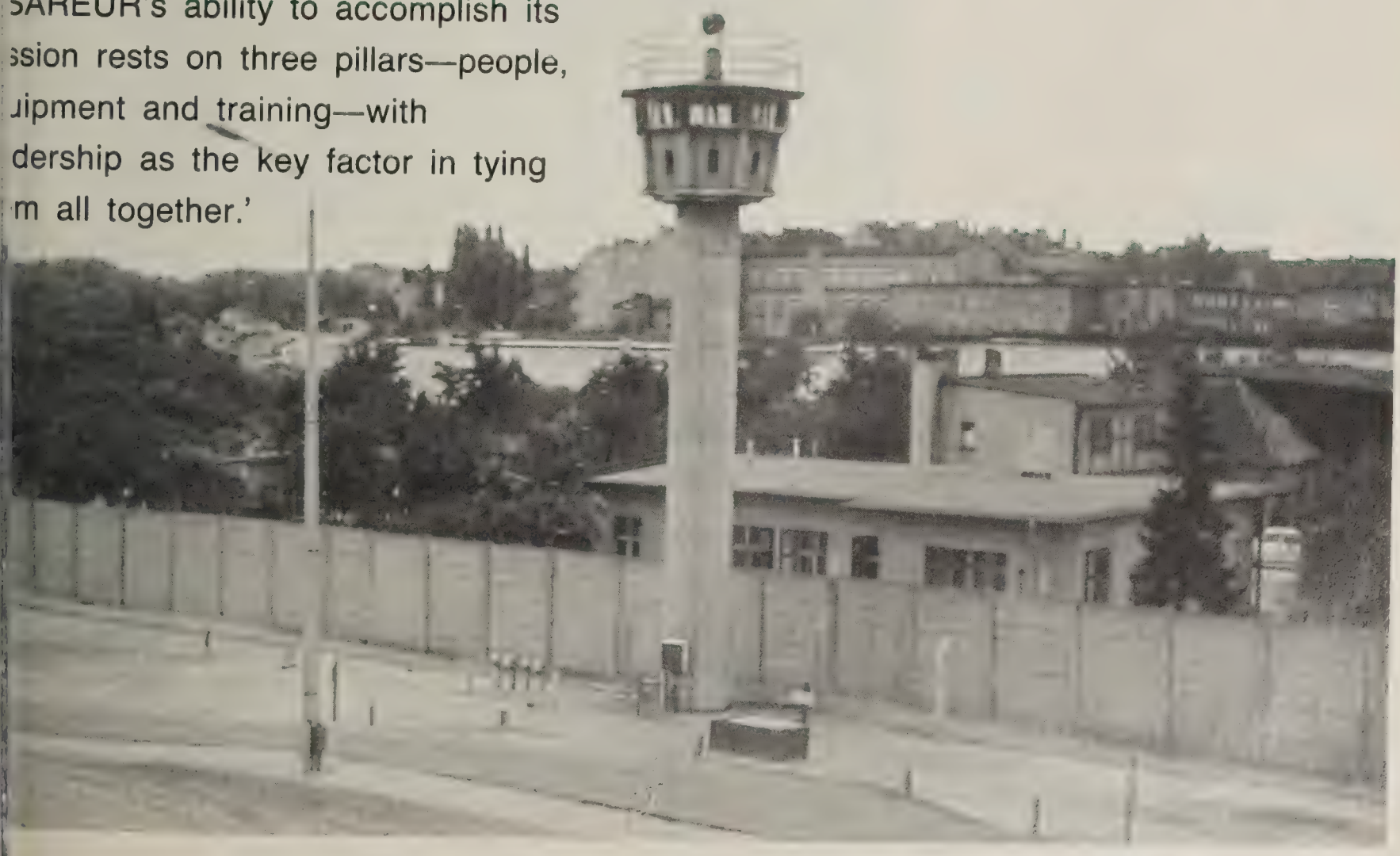
The plans for filling these needs have been drawn and the priorities established. With the current level of funding USAREUR has been receiving, we expect to have the facilities modernization program under control by the mid-1990s, although maintenance efforts will still be in progress.

Improvements in USAREUR's physical plant provide the environment in which our soldiers are able to excel. It is important for soldiers to know that their families are safe, comfortable and in healthy surroundings because training requires a lot of field time and life in Europe is a new experience for many young soldiers.

USAREUR has a high turnover rate, with 18 months being the norm for first-term enlisted personnel, while career people stay in Europe about three years. New people bring a variety of experiences from

Most Challenging Leadership Climate in the Army Today'

SAREUR's ability to accomplish its
ssion rests on three pillars—people,
uipment and training—with
dership as the key factor in tying
m all together.'



the four corners of the world. They mature in Europe and impart to others what they have learned while meeting the challenges of leading soldiers.

This experience is particularly fruitful because the European theater presents special problems for American forces. It is far from our base of operations in the United States and this means that nearly everything we do is more complicated. We have a long logistics tail and frequent personnel changes and it is time consuming and expensive to move personnel, supplies and equipment across so many miles.

We have limited space for training and too few facilities to support our forces. Furthermore, the European environment, with its differing languages, customs and laws, dictates adjustments to family life while creating a need for us to work across invisible barriers of language and methodology to train to meet our interoperability goals. Such are the challenges which our predecessors have faced for years and which we face today. These challenges are many and complex, but today's leaders have yet another challenge, one bigger than any their predecessors have had since the end of World War II: today we are implementing the largest force modernization in the history of our Army.

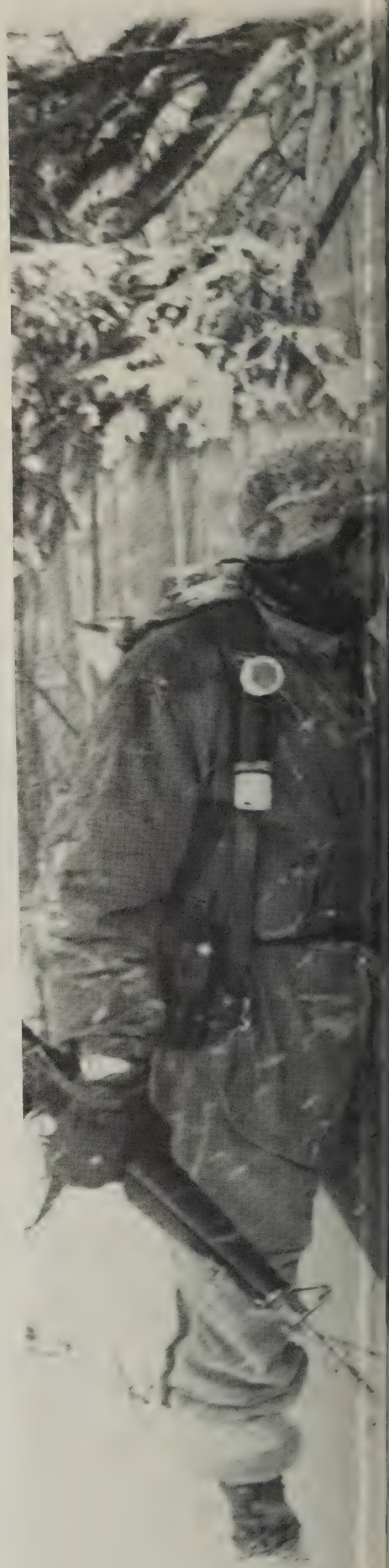
We are introducing over 400 new combat, combat support and service support systems over the span of a few years. Our program of modernization is well under way, with completion scheduled for the early 1990s. Equipment that is faster, more accurate, more mobile, better at night and more reliable is giving us greater combat power and survivability.

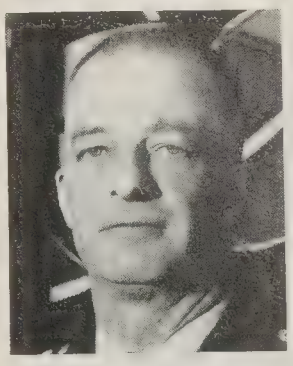
Modernization also means a great deal to the individual soldier and supervisor. New items require crews to receive extensive transition training. Maintenance personnel also have to support the new technologically sophisticated systems while maintaining the old for the duration of the phased changeover.

We are modifying our organizational structure to make the most of the new equipment and provide for better command and control. This modification involves going from maneuver battalions of three companies to battalions with four smaller companies while changing detachments to platoons, and vice versa.

All of USAREUR's maneuver brigades have been converted to the new J series, Modification, Table of Organization and Equipment (MTOE). The 3rd Infantry Division (Mechanized) is the first division in the Army to be fully configured with the Abrams/Bradley team of fighting vehicles, while the 11th Armored Cavalry Regiment will complete its full conversion to the Abrams/Bradley team before the end of 1985.

The dramatic improvements in USAREUR's ability to see the battlefield, communicate, and distribute the information gained are equally as significant as the organizational changes for the maneuver brigades. Systems such as "Quick Look" and "Guardrail," coupled with new command, control and communications systems like the new automated switch "Tri-Tac," proved their value in the 1984 autumn and 1985 winter "Reforger" exercises. Turmoil is generated as a result of these additions, deletions and organiza-





GEN. GLENN K. OTIS became commander in chief of U.S. Army, Europe, Seventh U.S. Army and NATO's Central Army Group in April 1983, after having served as commanding general of the Training and Doctrine Command (TRADOC) since August 1981. Gen. Otis enlisted in the Army in 1946, graduated from the U.S. Military Academy in 1953 and holds a master's degree in mathematics from Rensselaer Polytechnic Institute. He has been the Army's deputy chief of staff for operations and plans and commander of the 1st Armored Division. His other career assignments include: deputy commander of the Combined Arms Development Activity; deputy commander of the U.S. Army Training Center and Ft. Knox, Ky.; chief of staff, 3rd Armored Division; chief of the XM1 tank task force and commander of the 1st Brigade, 3rd Armored Division. During the Vietnam war, he commanded the 3rd Squadron, 4th Cavalry, in the 25th Infantry Division, and won the Distinguished Service Cross and the Silver Star. MAJ. DEWEY A. BROWDER is the assistant political advisor to U.S. Army, Europe. A former enlisted man who received a direct commission in 1968, he has had a variety of assignments in the personnel, administrative management and data processing areas. He was previously deputy adjutant general of the 1st Armored Division in Europe. A graduate of the Command and General Staff College, Maj. Browder holds a bachelor's degree in business and a master's degree in international relations.



tion changes, a condition which requires good leadership to minimize it.

The third pillar, USAREUR's state of training, reflects the excellence of its training programs and facilities. We are updating ranges at the major training areas and providing sophisticated training simulators for home station training. January 1985 saw the completion of the most ambitious training area upgrade in the history of USAREUR.

The 18th Engineer Brigade completed a three-year program of range improvements at the Grafenwoehr training area that has resulted in the most sophisticated automated range complex in Europe. The fielding of training simulators such as the unit conduct of fire trainer (UCOFT), video disk integrated gunnery simulator (VIGS) and the new aviation flight simulators provide vital home station training to units before crew engagements on the new ranges at Grafenwoehr. To date, 24 of these simulators have been fielded in USAREUR.

We are doing all these things in addition to the daily job of training. The combat arms soldier trains whether he is on the range, on an exercise or doing work associated with these activities. Peacetime's combat support or service support soldier also trains for wartime tasks because his or her jobs are essentially the same in peace or war. The major difference between the two situations is simply that of conditions.

In our training, we seek standardization. When soldiers learn to do things in a standard way, regardless of where they serve, they can move from unit to unit with minimal retraining. Further, disciplined soldiers react automatically in crisis situations.

All this adds up to deterrence, but it is not an automatic result; what brings all the elements together is leadership. In fact, material resources are of little value if they are not in the hands of competent and disciplined people, and competence and discipline are the products of good leadership.

Since the challenges in USAREUR are so extensive and the ability to stave off aggression depends on how effectively we manage our affairs, we are paying spe-

An armored personnel carrier crew checks a map before taking up positions in West Germany during the 1985 'Reforger' exercises.



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cial attention to the grooming of present and future leaders. A major contributor to USAREUR's readiness posture is the system of formal leadership schooling operated by the 7th Army Training Command and the divisions. For example, USAREUR operates ten noncommissioned officer (NCO) academies, where junior ranking soldiers are taught the principles of leadership.

These schools draw soldiers from their units with the daily problems of a deployed field Army fresh in mind. The soldiers learn how to cope with aspects of human behavior that may have stumped them only a few days before. They are made aware of differing leadership styles, and once back on the job, they are given the opportunity to decide for themselves how best to integrate well-identified methods of motivation with soldier concerns and unit missions.

Nearly 15,000 soldiers go through this learning process every year in USAREUR. Afterward, they are put back in the same unit environment, where their newly acquired abilities are tested.

Beyond the NCO academies, we also see to it that our first sergeants and commanders at company, battalion and brigade levels are schooled in the unique aspects of leading in the European environment.

All of these courses are valuable adjuncts to the Army's normal NCO and officer education systems; they are not substitutes, but without them, newly appointed leaders would need more time to reach peak performance. More importantly, soldiers up and down the line would not be as well led. Formal training and refresher courses in leadership at various levels facilitate mission accomplishment by teaching people how to make the most of their own personality strengths and job knowledge while dealing with others.

Structured learning is irreplaceable, but that must also be said of practical, on-the-job training. This is where duty in Europe offers opportunities that are as challenging as those found anywhere in the world. Every day, tens of thousands of leaders face problems which appear routine but which prepare the leaders and the led to meet the crucial situations that arise in combat. In this respect, the people in both categories need to be aware that interactions occur.

It is obvious that subordinates are affected by leader behavior. What is sometimes overlooked is the fact that supervisors react to subordinates, too, and teamwork can either be enhanced or harmed as a result. Every time a platoon sergeant or squad leader sits down with a soldier and listens to problems or gives advice on how to do someting better or take care of a personal problem, he or she is building competence, faith and cohesion—all qualities which pay big dividends when the chips are down.

It may also prevent an inspector general (IG) complaint or a discipline problem. The truth is that valid IG complaints are measures of failed leadership because those in command channels should deal with legitimate problems before they get to the IG. Generally, individual soldiers are helped by coaching them or seeing to it that they are fairly treated.

Soldiers are also helped by properly enforcing the rules. When a commander gives a soldier an Article 15 or gigs someone during an inspection, it teaches and disciplines. Each time a commander denies a reenlistment, puts somebody on a weight-control program or signs a co·r martial, respect for the Army and pr fessional pride are underlined as worth sentiments and builders of *esprit de cor* for good soldiers.

Similarly, when we promote a har working soldier, administer the oath to reenlistee or pin an award on a deservi person, the Army is saying "good worl or "we need you, and we want to ke you on the team." Ideally, the rewar will outweigh the disciplinary cases—a they do—but both are necessary, a both are duties of leaders.

In USAREUR, as in the rest of the A my, issues are not always clear-cut. Th is why we have leaders who can ma decisions. If all were cut and dried, would have little use for decision make as it stands, however, we need them m today than ever before. Mistakes a made, of course; that is a hazard in eve learning situation. But when we lea from our mistakes, we minimize the i



Mechanized infantrymen (above) *on the move during USAREUR maneuvers.*



A staff officer (right) *keeps track of tactical evolutions on a maneuver map during tank firing at Grafenwoehr.*

Photo: L. James Bin

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The crew of an M1 Abrams tank takes a break during training.

Photo: L. James Binder



Checking a map in front of their M60A3 tank are Sp.5 Amilear Solis (left), *a tank gunner, and 2nd Lt. Robert Nave, a platoon leader, both of the 1st Armored Division's Company B, 1st Battalion, 13th Armor.*

pact. The old adage that patience is virtue applies to all who supervise.

And, just as it is not always obviou what has to be done, we also have t grapple with who is to do it once w know what has to be accomplished. Th is a problem indigenous to large organiza tions, regardless of time, place or circun stances. We in the Army today are ex periencing this dilemma more often tha most of us care to admit.

To understand this problem more full it helps to think back to the lean yea after Vietnam. During that time, we ha a systemic weakness in our NCO corp experience was lacking. So, to compe sate for that, it became necessary for c ficers to do double duty. Often, platoo leaders and company commanders pe formed lower-level functions in additio to their own duties. Tasks had to b done, and they were, but the usurpatio of NCO duties was allowed to go on f too long. Even today, that situation ca still be observed in the case of office looking over the shoulders of their NC during barracks cleanup or routine offi work.

The basic challenge now is for us get our tasks at the right levels. We ha good, smart NCOs, and officers shou let them do their jobs. The leadership the NCO corps is at its zenith today, a NCOs are fully capable of taking care individual soldiers, training them a putting them together as crews.

Officers are to allocate resources, unit training, evaluate and plan. Lead share in the hardships, of course; they where the soldiers go and do what t soldiers do. We are all the stronger wh ever we follow these rules.

Integral to all the structured educat and on-the-job training are a numb of characteristics which are absolut essential for Army leaders wherever th are. USAREUR claims no corner on market, but there are leadership char teristics without which we would see r rale suffer, efficiency dampened and ability to execute our critically import mission severely weakened. To put it the simplest terms, three things are pected of leaders: *be, know,* and *do*

Every leader is expected to *be*: ethi motivated, concerned and physically There is no room for compromise beca leaders are examples. If subordinates serve dishonesty, disloyalty or coward such conduct can become an unwar standard of behavior. It is incumb upon each of us to be loyal to our



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USAREUR troops in training. Left: an M1 Abrams tank speeds down a country road during a dry-fire exercise. Below: infantrymen scramble aboard an M113 at Grafenwoehr.

periors, our unit, the command, the Arm and the nation. When faltering occurs, breakdown in leadership occurs and th can be devastating. If soldiers perceiv their superiors to be lacking in motiv tion, it is difficult for them to rise to th occasion when confronted with dange In the same vein, an unconcerned lead cultivates lethargy rather than a sense urgency. And, of course, a person wh is not physically able to do the thin demanded of the team as a whole w fail under strenuous circumstances.

The pressures of leading soldiers the border of the communist world c mand that we master our jobs. Amo other things, this means that we have *know*: the tactical and technical side our business; our subordinates, their wea nesses and strengths; and how to get t most from soldiers, to include the mo effective means of communication. Ta tical and technical excellence includes b sic things, such as familiarity with t terrain where we operate, inspection me ods and how to prevent cold-weather juries. When this type of knowledge demonstrated, it tells the soldier that leader is on top of the job. It also mak for greater safety and contributes to m sion accomplishment.

The third thing required of the pers in charge is that he or she *do* all th things he or she *knows* have to be do and *be* what is expected of a leader. I of little value for one to know the and be ethical, motivated, concerned physically fit if that person fails to accordingly. In reality, when appropr actions are not forthcoming, the eth principle is violated because that pri ple obligates us to do what is underst to be correct. When leaders at every e elon of command practice the *be-kn do* philosophy, they build cohesion fr the roots up. That is what makes strong; that is the formula for succe

Deterring war continues to be the m sion of the U.S. Army in Europe. At same time, we are modernizing our eq ment, organizations and facilities to sure that we will be able to continu deter in the future. These are big c lenges, but we are doing the job, lar through the efforts of our leaders a levels. The successes of the past yea test to that fact.



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DEFENSE COMMUNICATIONS

United Nations forces must be especially vigilant during the next few years as the political prestige of the Pyongyang regime continues to decline and that of South Korea is elevated while hosting the 1986 Asian Games and the 1988 Olympics.

Task in Korea: Convince North Attack is Futile

By Gen. William J. Livsey
Commander, U.S. Forces, Korea,
and Eighth U.S. Army

The volatile situation on the Korea peninsula has not been altered b time or circumstances. Hostiliti are deterred by a binational defense tea that seven years ago evolved from th multinational United Nations Commar (UNC) of the 1950–1953 war. Eighth U. Army, once the major ground compone of the UNC, is an equally proud memb of today's allied force—the Republic Korea (ROK)/U.S. Combined Forc Command (CFC).

Designation of 1985 as the "Year Leadership" certainly is pertinent to o mission in South Korea. For Eighth A my, it has been an interesting and oft challenging year.

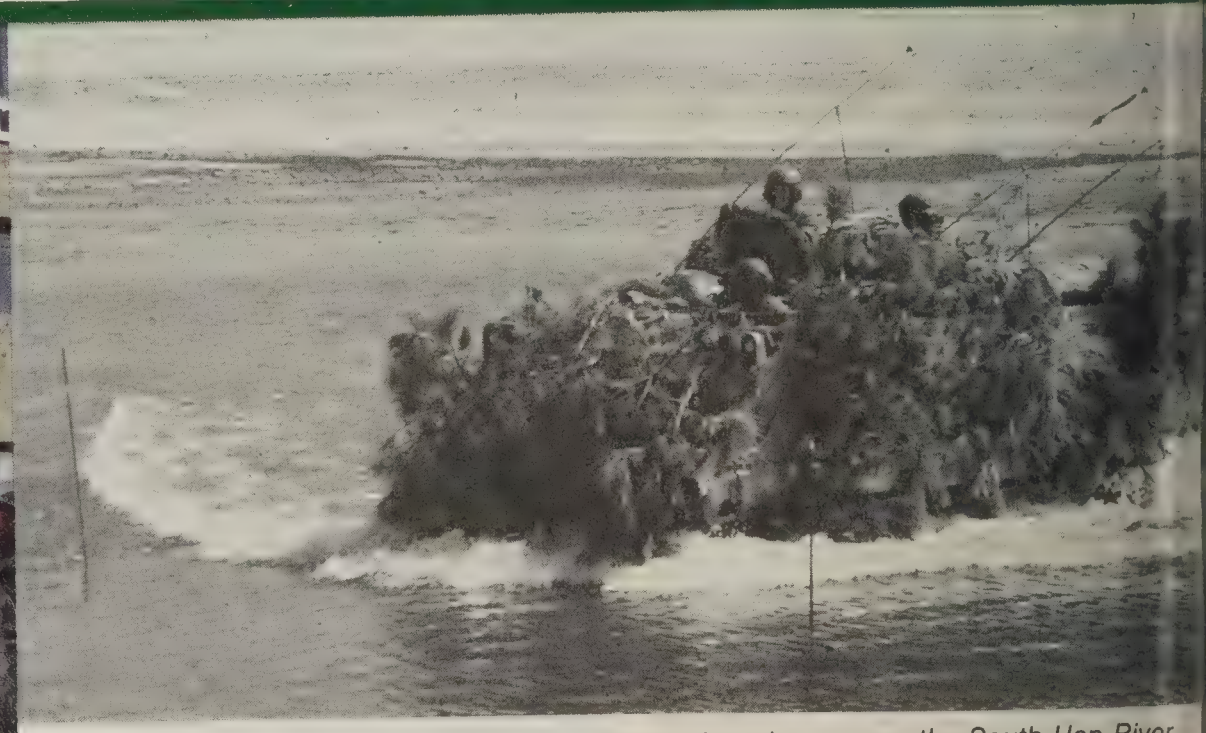
The events of the past year tested whet er the ROK/U.S. forces, in the essent process of deterring renewed hostiliti can also help bring about an environme in which peaceful unification betwe South and North Korea may become reality.

The dichotomy between these two c jectives, which are shared by the Unit States and the ROK, is more appare than real, for there is an intrinsic relatio ship and both can best be assured by common key—the military capability th will deter war or, if necessary, win i

How we build and maintain this stren is the salient theme for this report abo Eighth Army and how it relates and wo



Flower-bedecked troops of the 25th Infantry Division march through the streets of Chunchon upon their arrival in the Republic of Korea for exercise 'Team Spirit 85.'



A densely camouflaged armored personnel carrier crosses the South Han River during field maneuvers in the Republic of Korea.

Right: a 2nd Infantry Di soldier keeps watch at Post Ouellette in the Am sector of the Korean

n other American and South Korean
es in the long watch at the demili-
zed zone (DMZ).
bout 40,000 U.S. military personnel
based in the ROK as visible evidence
he American security commitment.
mission of American forces is to be
ared to deal with the military threat
eace.
he in-country forces, along with our
onstrated capability to augment them
n outside and our strategic capabili-
are major factors in deterring a re-
al of North Korean aggression. Our
ary objective is to deter war. Should
deterrent fail, our objective would be
efeat the invaders as quickly and as
o the front as possible.
ore than technology, time and ter-
rain shape our strategy; politics does, too. The long history of North Korea's hostile acts against the ROK and their distinct ideological differences do not prevent Seoul and Pyongyang from returning to a dialogue that originated in 1972 and ended a year later.

A renewal of the South-North dialogue during the past year has ranged from political discussions to the tragedy of national division, particularly the separation of an estimated ten million family members, and how inter-Korea trade and commerce could help bridge differences and encourage mutual trust.

We applaud this dialogue, for all gains on this front serve not only important Korean aspirations but can help to reduce military tensions on the peninsula. In our long-range defense strategy, it is important that we not lose sight of the fact that Koreans in both the South and North have a common wish for unification. While the dialogue so far has not brought any lasting improvement in the security situation itself, the very fact the talks have resumed influences defense considerations.

The aspiration for unification can be a building block if channeled through a peaceful forum. That is the goal of the ROK and its American ally. That same urge for unification may again spur North Korea to seek it by any means, including force: that, the ROK and United States will not allow.

Our best hope for future peace is that the continued U.S. security commitment and the development and further strengthening of the ROK will convince North Korean rulers that their policy of military confrontation cannot succeed and that peaceful dialogue with the South is the only sensible course that will benefit all of the Korean people. Negotiating the means for peaceful unification and resolution of the other divisive problems is properly left to the wisdom of the Koreans themselves.

We are very supportive of the South-North dialogue, but we are also maintaining a strong defense for what both nations consider good reasons. The hard-





Above, troops cross a bridge constructed by U.S. Army engineers during 'Team Spirit 85' field maneuvers.

line leadership in Pyongyang could be influenced more by its will than its wisdom in determining whether North Korea's future policies will be as deceptive and dangerous as they have been in the past.

We will continue to rely on a strong deterrent, even as the ROK proffers the hand of peace, for this combination has prevented war in Korea for more than three decades.

The events since last October offer solid evidence that U.S. and ROK forces are equal to the tasks before them. The evidence is in their performance, both that of leaders and their subordinates. The professional bonds between them have greatly strengthened and continue to grow and deepen.

North Korea's leaders do not have the privilege of sitting where I sit and seeing what I see. We offered again this year, as we have several times in the past, to give them an opportunity to view major training events. This proposal for mutual observation of military exercises is a measure that would help reduce tensions by eliminating concern and clarifying the defensive nature of our training activities.

The North Koreans refused, which is to be regretted. The more objective view might have helped alter the dangerous course they have plotted for four decades.

The vision of Kim Il Sung, the aging 73-year-old dictator who has been North Korea's sole leader since the 1945 liberation, has always been clouded with ambition and now is pushed by the irreversible shrinking of his remaining time. That raises concern about the increased possibility of renewed war or other types of violence should North Korea decide the possible prize is worth the probable price.

The period between now and the 1986 Asian Games and the 1988 Olympics may prove particularly dangerous; both events will be hosted by Seoul. A significant incident could undermine perceptions of the ROK as a secure place for world-class events or for the investment so vital to its economic success. Undermining these accomplishments would serve Pyongyang's efforts to deny the republic's legitimacy. Great vigilance on our part is needed during the months and years ahead.

North Korea's course is clearly threatening. It continues to build on and modernize a military force that far exceeds its legitimate defensive needs.

Pyongyang conceals these forces; it denies their very existence, but the truth cannot be hidden—the magnitude of its military forces, their continuing improvements to weapons systems, sophisticated and offensively oriented training, hardening of underground positions near the DMZ, tunneling operations and, recently, reorganization of its forces to create strike corps and their forward deployment are the hard facts.

The purpose behind these disturbing activities is not explained. North Korea's claims to want peace are contradicted by evidence of its commitment to a military option should Pyongyang perceive it has a reasonable chance to overrun the South.

Time, as a significant factor of strategy, both favors us and is an increasingly urgent cause for concern. I believe that, by the early 1990s, all comparisons between South and North Korea, including the military, will favor the ROK. That prospect, however, holds its own dangers to peace.

As noted before, we are at the threshold of a crucial phase in North Korea's four-decade-old quest to communize the peninsula. The North has severe economic problems which strongly indicate the current military balance cannot remain in its favor much longer. The South's economy, already four times that of the North, will further widen its lead.

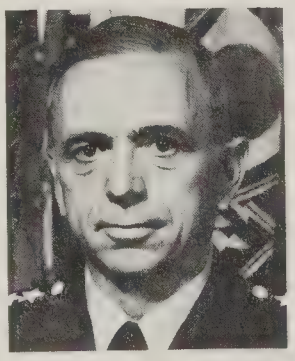
Pyongyang's repeated attempts to ur dermine ROK successes have tarnishe North Korea's own image. While its rela tive status continues to erode, the RO will bask in the spotlight of world atter tion when the Asian Games and summe Olympics take place in Seoul. The inev tability of a declining status, among othe considerations, could push Pyongyan toward use of military force.

It has prepared for that possibility. Th North's emphasis on building militar strength is fueled by the infusion of som 25 percent of its annual gross nation product. The detrimental impact of th effort on its civilian economy is seeming ignored. This uncompromising effort h gained North Korea many quantitati and some qualitative advantages in k combat capabilities over the ROK/U. defenders.

North Korean combat forces are d ployed well forward—significantly so co pared to two years ago—and are capab of launching a major attack with lit warning. The most significant chan during the past year was the creation highly mobile strike forces in the rear their forward corps area, some 40 to kilometers from the DMZ. At least tw strike corps were organized with tar mechanized and truck-mobile brigade

This reorganization provides North K rea a second-echelon force located with a few hours' march of the DMZ. Farth back, additional newly organized arm





GEN. WILLIAM J. LIVSEY is commander in chief of the United Nations Command and ROK/U.S. Combined Forces Command, commander, U.S. Forces, Korea, and commanding general, Eighth U.S. Army. He served as deputy commanding general of U.S. Army Forces Command until mid-1984. Commissioned from ROTC after graduation from North Georgia College in 1952, he holds a master's degree from Vanderbilt University and has taught at the U.S. Military Academy. Gen. Livsey also graduated from the Army War College and the Armed Forces Staff College. A holder of the Silver Star, he commanded troops in combat during the Korean War, and served in Vietnam as a division operations officer and infantry battalion commander. Gen. Livsey also served in the early 1970s as executive and senior aide to then-Chief of Staff of the Army Gen. Creighton W. Abrams. He commanded the U.S. Army Infantry Center and School, Ft. Benning, Ga., 1977–79; the 8th Infantry Division (Mech), in West Germany, 1979–81; and VII Corps in Europe, 1981–83.

mechanized forces, as well as river-
sing and fire support assets, are avail-
for third-echelon deployment.
rther improvement in offensive strike
abilities have resulted from the for-
d deployment of river crossing assets
construction of hundreds of drive-
ugh storage tunnels near the DMZ,
h would provide pre-attack conceal-
t. Mobility and combined arms exer-
continually hone their rapid deploy-
t and attack procedures.

Pyongyang's strategy, indicated by the structuring and training of its forces and confirmed by a recent defector from the North Korean People's Army, is to fight a two-front war aimed at sweeping the entire peninsula in five to seven days.

This strategy foresees a massive conventional attack across the DMZ and simultaneous ranger/commando raids into ROK rear areas. North Korea's elite 25-brigade commando force—some 80,000 to 100,000 strong—trains for these missions. They are supported by more than 250 AM-2 aircraft and over 100 amphibious landing craft.

Although the North's objective is quick victory, it has amassed logistic strength adequate for several months of high-intensity combat in case *blitzkrieg* tactics do not force the ROK into early submission. North Korea has formidable forces for both main and subsequent echelon attacks.

The 750,000-strong North Korean Army is about 40 percent larger than ROK ground forces and has almost twice as many maneuver units, tanks, artillery pieces and armored personnel carriers. Ongoing mechanization provides a potent direct-fire support capability with greatly enhanced mobility. Armored and mechanized divisions also have added self-propelled artillery.

In the air, North Korea holds almost a two-to-one advantage in jet fighters. The air threat was qualitatively improved earlier this year when Soviet-built MiG-23 aircraft were transferred to North Korea as a result of strengthened relations between Moscow and Pyongyang.

North Korea emphasizes support of ground force operations and has acquired a large helicopter fleet including, through illicit channels, civilian models of a type of U.S. helicopter currently used by the



Left: U.S. and ROK tank crew members worked closely during 'Team Spirit 85' field training.

Below: U.S. and ROK soldiers leave the landing zone after being airlifted aboard CH-47 Chinook medium transport helicopters.





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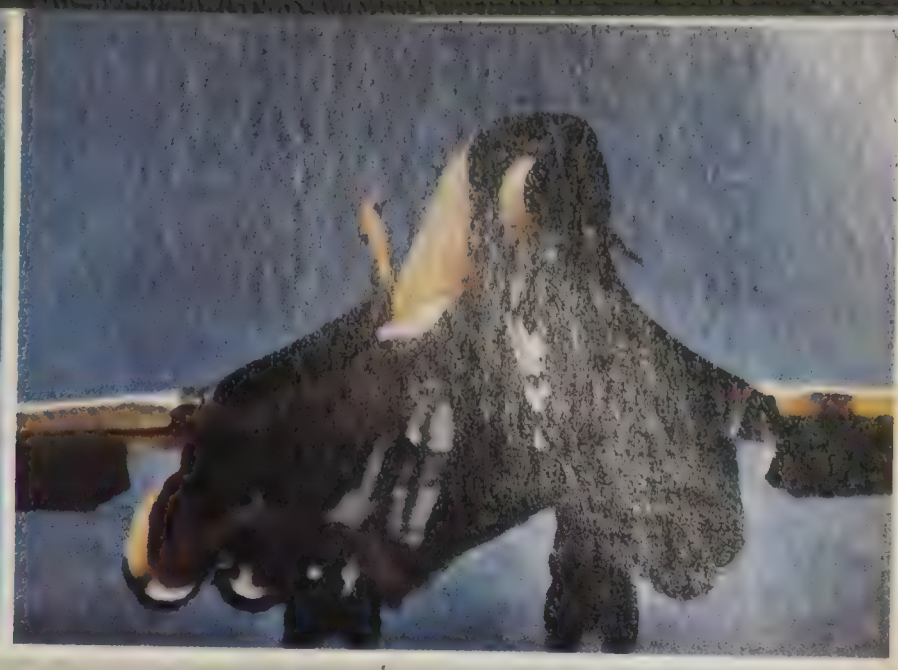
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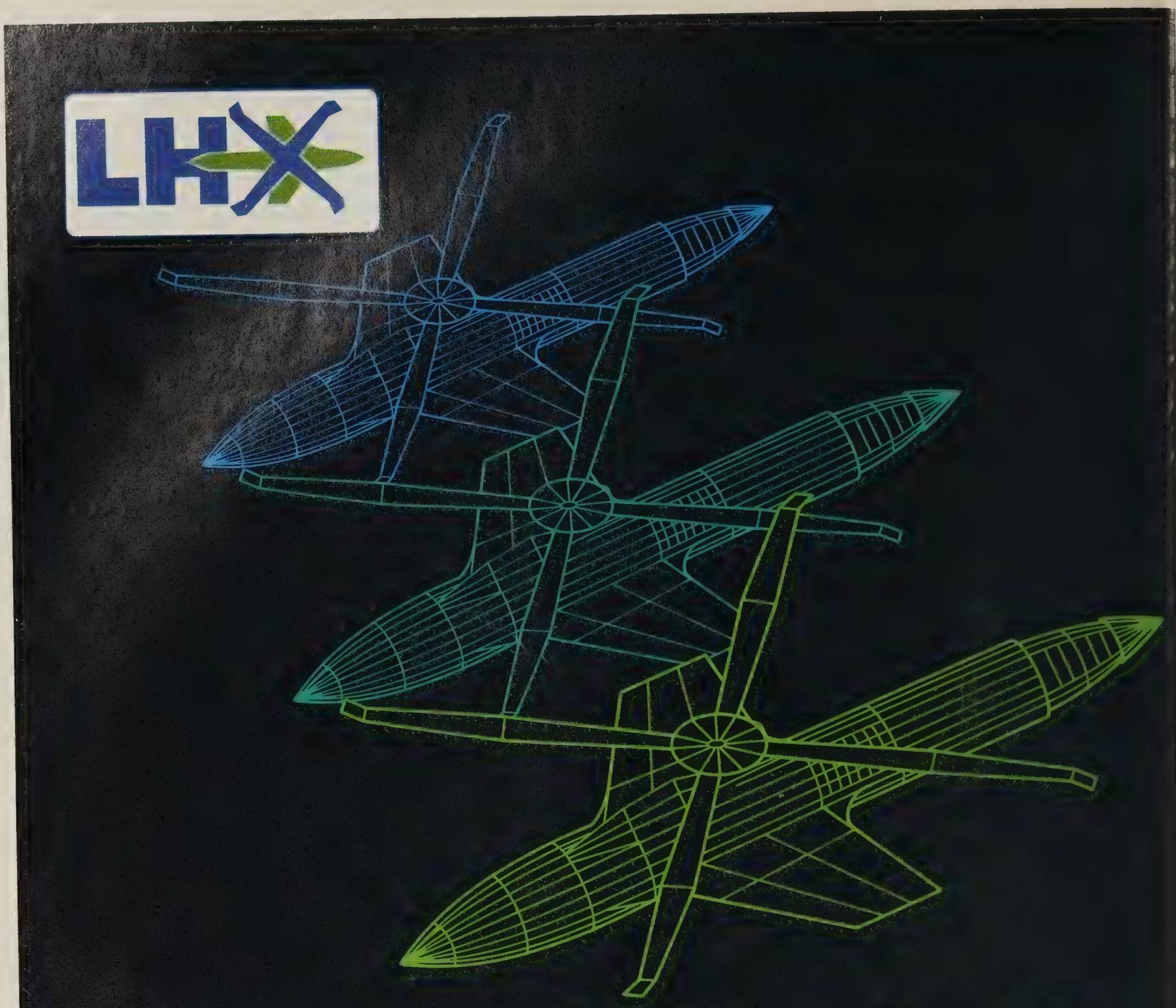
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River crossings are a regular part of the training for soldiers stationed in the Republic of Korea.

K. Air defense is provided by one he most dense antiaircraft artillery A) networks in the world plus wide-leployed Soviet SA-2 surface-to-air iles (SAMs).

round forces still use towed AAA pons and low-altitude SA-7 SAMs, sophisticated track-mounted systems eing developed. The North's air bases strongly defended, and U.S. and K pilots would have some difficulty ng to their aircraft on the ground. be of use in war, of course, they ld have to fly and would become erable to the skills and technology of K and American pilots and aircraft. he North Korean Navy is large and atile, with more than 500 combat craft, ng them some 20 diesel submarines. e 1980, ship-borne Styx missile launch-have been increased in number to over 100. The development of a large e of high-speed landing craft, boats d with multiple rocket launchers, and oats provides the capability to carry mphibious raids and shore bombard-along the ROK coastline.

orth Korea now produces almost all s ground-force equipment and has apability to build a variety of naval , including submarines, frigates and l boats. The scope and breadth of ground and naval modernization rams are so great that Seoul will have ulty simply matching further expected ovements. The combined ROK and forces must counter quantitative im-ces with higher quality and superior nology.

The American commitment to ROK freedom and independence is anchored by forward-deployed forces. The support commitment encompassed under the 1954 Mutual Defense Treaty and the daily visibility of combat-ready ground and air forces are decisive elements of the deterrent. U.S. units, should war be renewed, would be engaged alongside ROK forces under the CFC—the only American/allied combined command outside NATO.

A description of command relationships will help explain the current status of Eighth Army, for while its mission remains the same—to assist in the defense of the ROK—its role has been altered in both peace and as projected in wartime. During the Korean War, and for more than 25 years afterwards, the UNC was the major headquarters that planned the ROK's defense and would have employed combat forces in case hostilities resumed.

Most of the ROK armed forces were under UNC's operational control, as they had been during the Korean War. Eighth Army, the UNC's major ground component, was delegated authority to exercise operational control over assigned ROK Army forces. A separate joint headquarters, U.S. Forces Korea (USFK), provided coordination for the American service components.

A major weakness of this command structure, a weakness that became ever more obvious with the passage of time, was that it did not really use the expertise and professionalism of the ROK forces. Although given primary responsibility to defend the DMZ, the ROK forces had only a small role in the strategic planning. This shortcoming was rectified in November 1978 when the ROK/U.S. Combined Forces Command was inaugurated.

Spurred by the prospect that American ground combat troops would be withdrawn from the ROK, planning for the CFC had begun more than a year earlier. The withdrawal plan was cancelled; however, establishment of the CFC was carried through to fruition because the combined headquarters would be a more effective and appropriate structure to plan and execute defense responsibilities.

The CFC today is the war-fighting headquarters. Its role is to deter or defeat outside aggression against the ROK. Headquarters UNC continues, with a significantly reduced staff, to carry out missions related to implementation of the 1953 armistice agreement, for example, meetings and other activities of the military armistice commission such as investigations of incidents within the DMZ.

The UNC would also be the vehicle for reintroduction of third-country military forces should any of the other nations accredited to the UNC decide again to directly assist the ROK in case of war or for other reasons.

In wartime, the ground, air and naval component commands of the ROK/U.S. CFC would provide a coordinated, binational defense. Headquarters USFK would be the channel through which U.S. forces would be channeled to the CFC for employment by the respective war-fighting

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ponents wherever needed.
ghth Army's primary role is to en-
the combat readiness of U.S. ground
s for employment under the ground-
ponent command. Everything that we
ith our soldiers and units is oriented
rds preparing for and accomplishing
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proximity of these hostile forces is
ver-present reminder. We train and
as we would fight.
hth Army is a major Army com-
(MACOM) and performs functions
al to that designation. It also, along
U.S. Naval Forces and U.S. Air
s Korea, is a component of USFK.
asons of manpower economy, Eighth
and USFK have a consolidated
-many of whom are also assigned
eral duties with the UNC and CFC

jor Eighth Army components in
time include the 2nd Infantry Divi-
19th Support Command, 8th Mili-
olice Brigade (Prov), 2nd Engineer
, 17th Aviation Group (Combat),
Medical Command, and several

ROK troops return from the field at the conclusion of the 'Team Spirit 85' exercise.

Medics load 'wounded' soldiers into a field ambulance as part of a 2nd Infantry Division mass casualty exercise in South Korea.



smaller combat support (CS) and combat service support (CSS) units.

A unique Eighth Army unit is the UNC Support Group–Joint Security Area (UNCSG–JSA). Composed of 320 U.S. and ROK soldiers, the group is under the operational control of the commander in chief, UNC, and staff supervision of the UNC Military Armistice Commission (MAC) secretariat.

The UNCSG–JSA provides security in the UNC sector of the MAC Headquarters area of the JSA, support for the UNC MAC and the Swiss and Swedish delegations to the Neutral Nations Supervising Commission and to UNC guests at Panmunjom.

Other Eighth Army units stretch from the DMZ, where forward elements of the 2nd Infantry Division share the truce watch with ROK forces, to the port of Pusan in the south. In between are the service support units which support, sustain, move and care for Eighth Army's more than 22,000 U.S. troops and nearly one-third that number of ROK augmentee soldiers.

These are KATUSAs, an acronym for Korean augmentation to the U.S. Army, a program originated by Gen. Douglas MacArthur early on in the Korean War. KATUSA soldiers are fully integrated into U.S. Army units to serve the major portion of their 30-month active-duty obligation. They provide a welcome source of continuity and are also a a valuable cultural interface for Americans.

An all-out North Korean effort to conquer the ROK ultimately would have to be defeated on the ground. North Korea's current military advantages would necessitate out-of-country American naval and air support to defeat a major attack.

Any decision to bring in a U.S. ground force augmentation would depend upon the developing situation; however, Eighth Army is prepared to receive augmentation units, validate their readiness and make them available to the CFC for combat employment.

In addition to the mission of readying its combat, CS and CSS units for wartime employment, Eighth Army provides the majority of the command, control, communications and intelligence (C^3I) at field-army level in combined warfare. The combined nature of these functions and reliance on long lines of communication complicate the mission.

Force readiness improvements continue to be given highest priority. Our top priorities are training and maintenance.

The entire focus of Eighth Army is to prepare our soldiers and units to win the AirLand Battle. That doctrine, with some adaptation, is well suited to the tactical situation we face in Korea. The North has a numerically superior force with strong second and third echelons backing up powerful main attack forces.

There is not much room between the DMZ and the major objective of a North Korean attack, the ROK capital of Seoul, only 26 miles away. To protect Seoul we would have to fight the close-in battle with enemy maneuver units near where they crossed the DMZ, using indirect fire

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ield artillery, attack and maneuver opter operations, and close air sup-

e would also have to fight the deeper e beyond the immediate conflict near)MZ. This would require that we lo- and identify reinforcing echelons of ny forces and target their destruction rtillery, tactical air and other means able to the commander.

do that, we have to knit, not nail her, the tactical air and land force cipants in the AirLand Battle doc-. Only training that includes a high ee of fidelity to the experience of oat can do that; it arms our soldiers dvance with the techniques and de- ds of combat that will ensure success he battlefield.

ghth Army's training goal is for in- luals and units to sustain wartime ciency at all times. We accomplish through quality, multi-echelon train- where all levels—from individual, crew squad up through command and level—are readied to go to war on a ent's notice. We also emphasize stan- ization, doing it the Army's way, to d having to relearn techniques and edures every time a soldier changes .

hting as a combat arms team in a ined army is a way of life and Eighth y trains in this manner. Cross attach- and wartime organizations and rela- hips are stressed to ensure interoper- with ROK forces and a smooth ition to war. We try to maximize cipation in joint and combined train-

ch of Eighth Army's training takes in the rugged hills of South Korea's ard ranges in the terrain and under me and weather conditions the sol- could expect to find if hostilities renewed. In the idiom of today, ne does it better" than the 2nd Di- . The Indianhead troops spend over rcent of their training time in the often at night and frequently linked ROK Army or Marine Corps units mbined exercises.

e other key to overall force readi- s logistics readiness, the means by we support and sustain our forces. one of our most urgent concerns. n Army logistics operations must unt the aging of a considerable por- of our inventory and the time/dis- factors between continental U.S. US) sources and users in the ROK. good example is Eighth Army's ed vehicle fleet; half of these assets are ten years old. Intensive management provides an interim solution, but the long term requires replacement and modernization. A step forward this year was the fielding of the commercial utility cargo vehicle, which replaced several series of our overage vehicles.

The command also continues to repair selected U.S. equipment, using the ROK industrial base, through contractual means in support of a commitment made by the secretary of defense. Attainment of contract maintenance objectives affords a significant savings in reduced labor and transportation costs. Maintenance turnaround time has improved the combat readiness and sustainability of our equipment.

No matter how good our weapons, training programs and combat doctrine are, there is a more important factor for success or failure in combat. That is the human factor. How good are our troops today? As far as I am concerned, the young people who serve the Army today are as good as they have ever been, and I believe very strongly that they have almost always been good.

We have seen reports that our soldiers did not perform well in one war or another, but I for one have never accepted that knock. The soldiers that I led up the steep hills of Korea's Chorwon Valley in 1951 were outstanding and very courageous. The Korean battlefield was where I gained the highest respect for the American soldier, and the ROK too, because I had them also. Nothing that I have experienced since—in Vietnam, in Europe and during two subsequent tours in South Korea—has changed my opinion one bit.

Today's young people are excellent material, but we have to give them the best leadership possible. We cannot do it only by example. We have to do that, of course, but it also takes mentoring and counseling. For the soldier and his unit to succeed and survive in combat, human communications must not only guide professionalism, but build trust, loyalty and, above all, the confidence necessary to seal the bond between leader and subordinates. I know it works. I have seen it on the battlefield.

Eighth Army benefits from the overall excellence of today's young Americans who are enlisting. Intelligent, patriotic and often career-motivated, they respond well to good leadership and discipline. They want and appreciate meaningful, realistic training. These are attributes that make good soldiers and they are having a highly beneficial effect on combat readiness.

Eighth Army soldiers understand the importance of their mission and how they and their unit contribute to its accomplishment. Many of these soldiers face danger daily. All are confident that they can repel and defeat a North Korean invasion.

The actions of the American and South Korean soldiers during last November's firefight at Panmunjom clearly showed both superb leadership and confident interaction between the unit leader and his men. The fact that both U.S. and ROK Army soldiers were involved is evidence of the universality of training principles. The soldiers showed confidence and cohesion, the two most critical variables in the outcome of a combat operation.

I talked with these young troops shortly



Members of E Company, 1st Battalion, 17th Infantry (Mechanized), 2nd Infantry Division, receive a traditional cup of tea from South Korean villagers during exercise 'Team Spirit 85,' as ROK officers look on.



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rward. They knew their training paid when they faced, most for the first e in their lives, an armed enemy in a or-death combat situation. I did not e to tell them that. I just told them it a wonderful and important job they done, and that the United States and Republic of Korea were very proud hem. What they did that morning on November was a small-unit action at very finest.

will recap the facts of that event. A liet citizen touring the Joint Security a broke away from his North Korean rts in a attempt to defect to the free world. The communist guards pursued him, firing pistols and rifles as they illegally crossed the military demarcation line.

Our soldiers immediately acted to protect the defector and defend themselves. The ensuing firefight left one ROK soldier killed, an American soldier wounded, three North Koreans killed and five others seriously wounded.

U.S. and ROK soldiers in the UNC guard force showed great professionalism and courage in reacting to this unprecedented incident. They responded with total proficiency and clear justification. A UNC quick-reaction force that deployed into the area quickly pinned down the intruders. Many more North Koreans could have been killed, but the disciplined restraint of our soldiers kept the incident from flaring into a major crisis.

They were successful because their training was thoroughly planned and properly executed. They developed, in the nonthreatening environment of training, the mutual trust and confidence between subordinates and leader that make a squad or a platoon a combat-ready entity. The training and leadership-enhancement efforts under way in all other Eighth Army units would pay off with similar results.



rew members load ammunition into n M163 Vulcan during a live-fire train-g exercise at Sea Range in the Re-ublic of Korea.

What we do in South Korea is important. There are valid reasons for our military ties there—reasons of American self-interest as well as legal and moral commitments seeded at the end of World War II when U.S. forces entered the Korean peninsula to accept the Japanese surrender south of the 38th Parallel, and in 1950 when American combat forces returned to help the ROK repel North Korea's invasion.



1–60 Black Hawk transport helicopters approach a landing zone, where they will drop d Infantry Division soldiers behind 'opposing force' lines during an air assault maneuver.

Our binational relations with the ROK encompass not only ties of duty and honor, but also the peaceful arts of commerce. The relationship and security alliance with South Korea are part of a larger canvas of diverse and important U.S. interests in that part of the world.

Asian-Pacific commerce represents nearly a third of all U.S. foreign trade, a higher percentage than in any other area. Last year, U.S. trade with the Asian-Pacific nations totaled approximately $174 billion, an increase of some $37 billion, or 27 percent, over 1983. The ROK, as our seventh largest trading partner, is a growing part of this commerce.

With so much at stake, the United States pursues a policy to promote peace and stability in northeast Asia. Preventing a renewal of hostilities in Korea is essential to that objective; the threat to us and our allies would be unacceptable should an adversary control the peninsula. Renewed war there could boil over the borders and bring confrontation between the major powers.

That would undermine American efforts to maintain stability in northeast Asia, which already faces a greatly increased threat as a result of the ongoing Soviet military buildup. Since the beginning of this decade, the United States has acted to improve capabilities in its Pacific forces in response to the Soviet attempt to impose hegemony in the area.

A strong, free Republic of Korea is vital to the success of the U.S. Pacific command in countering Moscow's buildup of its Asian forces and retaining a balance of power in this region. A secure ROK is the keystone in the arch of regional stability on the northern Pacific littoral and blocks Soviet expansion in that area. For that reason, among others, it is in the fundamental interests of the United States to foster and support its Asian friends and allies, including the ROK.

Forward-deployed forces demonstrate American resolve to meet treaty commitments and protect our interests. The geostrategic importance of the Korean peninsula and the duration of our security commitment to the ROK have made that alliance a bellwether of America's role in the Asian-Pacific area.

The United States has stood that test for more than three decades; American soldiers in Korea stood it exceptionally well this past year. Eighth Army, at the forward edge of freedom, makes a major contribution to the security posture.

Despite the existence of the 1953 armistice agreement, peace in Korea is not as-

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sured. It must be constantly guarded. Because the ROK and U.S. forces are in the defense, I am not overly concerned about having actual parity between the forces. We can blunt a North Korean attack without force parity, but we want more than that. We want to prevent a renewal of fighting that would reverse the clock on 35 years of the ROK's progress.

The CFC enters its eighth year this November. More than 650,000 of the world's finest soldiers, sailors, airmen and Marines are under its peacetime operational control. Most of the ground forces are South Korean. They are highly professional, but lack some of the sophistication of U.S. ground units.

The infusion of American technology provides them combat multipliers—such as command and control, firepower and electronic warfare—which greatly boost the effectiveness of the soldier slugging it out on the ground.

There is no area in our defense planning where we are just sitting pat. Reorganization of ground forces to include the Third ROK Army as a field army under CFC's operational control improves balance in command and control of front-line forces; this adds up to a greater capability to mass combat units and improves the resiliency of our forward defenses. We also have taken appropriate steps to counter the North Korean redeployments.

Joint and combined training stresses integrated air and naval power in support of ground forces, enhancing interoperability. We are making improvements in C^3I by upgrading facilities and systems at the war-fighting headquarters.

First-rate strategies still need timely, accurate information about enemy forces to be successful. There is a real need, spurred by last year's reorganization of North Korean ground forces and redeployment nearer the DMZ, to improve indications and warning systems.

North Korea, a hermetic state, has long been regarded as a very difficult intelligence target. Its recent forward deployments significantly reduce requirements for pre-attack preparations and troop movements, further complicating our ability to obtain advance warning of an impending North Korean offensive.

That complication is being worked on, but in the meantime we have to be prepared to make the transition to war with little advance notice. That requires improvements in the sustainability of forces, including ROK access to essential war reserve stocks. The ROK actively contributes to the sustainability of its own forces in addition to improvements designed to reduce North Korea's present combat advantages.

The difference between South and North Korea in allotting national treasure to the competing demands of defense and civil society is simply enormous. In recognition of its civil needs and national development, the ROK has learned to get along with a war deterrent that contents itself with something less than complete parity with the North. The presence of U.S. forces helps narrow that threshold.

The ROK is about to reach the final year of a second five-year force improvement plan. It is bringing improvements in the armor, antiarmor, air defense and communications capabilities of the South Korean forces.

The plan also provides for continued aircraft purchases as well as coproduction/local construction of navy frigates, corvettes and high-speed patrol craft. The ROK Air Force is benefiting from in-country coproduction of the F-SE/F and will be flying state-of-the-art aircraft upon delivery of the F-16.

Continued major improvements under way in Eighth Army add to an impressive program of modernization that over the past two years has included, besides the previously mentioned commercial utility cargo vehicle, the self-propelled and towed M155 howitzer, tow-capable AH-1 Cobra helicopter, the UH-60 Black Hawk, and a combat intelligence battalion in the 2nd Division, among major systems.

During the past year, the division's firepower was boosted by fielding the multiple-launch rocket system and replacing its M48 tanks with M60A3s.

We are reorganizing the 2nd Division to be heavy in firepower and mobility to complement the combat power of the ROK Army.

Eighth Army will receive some 135 new systems over the next few years. These include the Copperhead antiarmor projectile next year and additional helicopter battalions. Communications/automation systems capability/sustainability have been given strong emphasis.

Additional tactical signal assets will help fill long-term requirements for communications flexibility. Newly developed mobile communications packages—called "Road Warriors"—give commanders the ability to control forces while deployed away from fixed command centers.

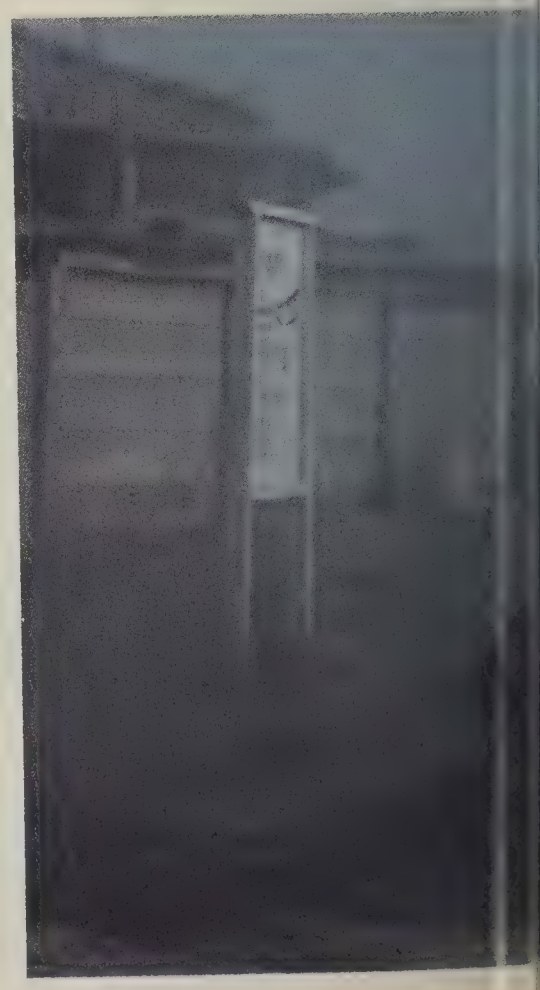
Additionally, fixed U.S. communications systems are being upgraded with a buried fiber optic cable system to provide high-quality, digital circuits and hig capacity, digital electronic switches whi will provide expanded capability wi vastly improved service. Introduction the corps-theater automatic data proce ing service center will provide the muc needed survivability for in-country ma agement systems.

Continuing improvements to U.S. A Force elements in South Korea strengthe the deterrent and war-fighting capabili A major improvement was the conversi of A-37 assets to the OV-10, an aircr better suited to command and cont requirements in our defense plannin Also under way is the upgrading of ba support at airfields which would be us by U.S. Air Force augmentation squa rons during a contingency.

Many of these projects, as well as i provements to ground-force capabiliti are funded in whole or in part by ROK government under the Combin Defense Improvement Program (CDI as host-country support is known in So Korea. Peacetime CDIP savings and c avoidances for the U.S. government to over $990 million annually.

Significant progress was made dur the past year on the management a redistribution of excess materiel. Eig Army, recognizing the high potential b efits to be gained by making full use available resources and the cost savi involved, established a major project management of excess materiel.

An excess materiel management te was organized and deployed through





A U.S. soldier makes friends with South Korean children during the 'Team Spirit 85' exercise.

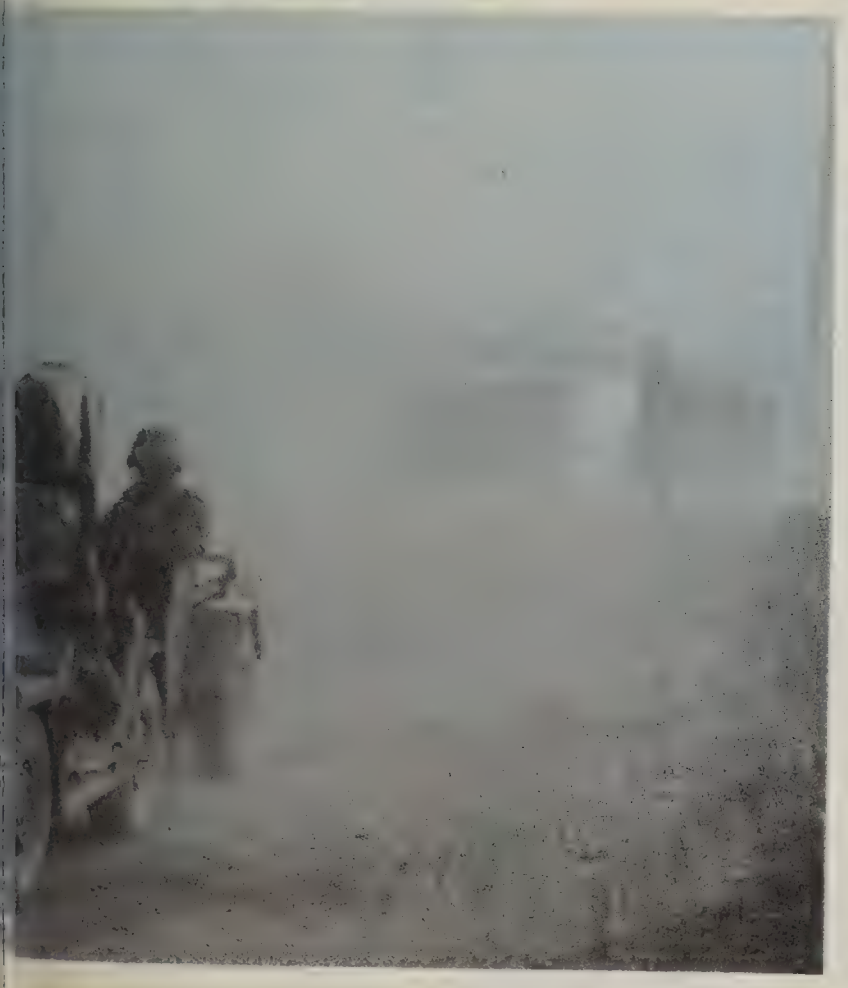
the command to identify problem areas, determine and implement the required fixes and monitor the completion of directed corrective actions.

Achievement of the command's excess materiel management objectives for 1984 resulted in the recovery of over $223.2 million in excess materiel, the return of $151.9 million in excess materiel to CONUS depots and improvements to the readiness posture of 18 units in South Korea. This management initiative not only has proven to be beneficial to Eighth Army but also assisted in improving the Army's supply system.

The expeditious recovery and return of usable excess materiel to the supply system enabled maximum reuse of resources, improving customer support and precluding unnecessary additional procurements. Cost savings made funds available for procurement of mission-essential supplies, repair parts, and equipment to sustain our forces. As a result, the excess materiel management program has been perpetuated as a permanent priority program in Eighth Army.

Thanks to strong congressional and Administration funding support, the Eighth Army physical plant is undergoing a major renaissance as old, temporary structures built in the 1950s and 1960s are being replaced with modern, semipermanent facilities. The new construction funding must remain at or above current levels if we are to meet our goal of replacing the remaining temporary buildings by the mid-1990s.

Construction priorities are to replace inadequate housing for unaccompanied personnel and to support force modernization initiatives. With continued congressional support, we will have all our soldiers in modern barracks by 1990.



Dry dirt roads and heavy tactical traffic created clouds of dust as troops deployed to the field during 'Team Spirit 85.'

In 1985, construction of 300 new family housing units in Seoul will be completed and construction begun on new houses in Taegu as part of a major family housing improvement initiative that includes renovation and modernization of all family housing in South Korea.

Quality of life is a continuing concern. Last year's focus on the military family has been extended in 1985, just as we have continued the previous Army emphasis on excellence. We are implementing a family action program that serves as a focal point for quality of life initiatives. The family member employment assistance and exceptional family member programs are initiatives that will strengthen bonds between the Army and its families.

With more than 85 percent of Eighth Army personnel on an unaccompanied tour, the family effort puts great emphasis on the single soldier as well as the "geographical bachelors." We have a comprehensive five-year morale, welfare and recreation plan that addresses all facilities and programs.

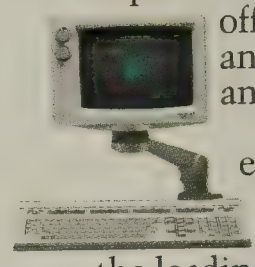
Eighth Army has been self-sufficient in the nonappropriated fund area since 1981 and returns the soldier's dollars in the form of quality programs, professional management and new or renovated facilities. Plans have been formulated and have won staff endorsement at the departmental level for construction of a centralized, multifunctional family center in the Seoul area.

These efforts, as needed as they are for deserving soldiers, and also for the men and women of the other U.S. forces in South Korea, do not divert attention from the command's primary mission of deterring war or erode our will to win, if we must fight. Everyone clearly understands that while our emphasis is on deterrence, we must back that aim with the determination and capability to succeed in combat.

There is little likelihood that the threat of war on the Korean peninsula will be

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ificantly reduced until the North ac-
s that it cannot impose its will by
e of arms. The ROK is firmly com-
ed to freedom. The United States
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Ve face a strong adversary but ROK
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e victorious.

Ve have new, complementary weapons
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on and interoperability between the
es is at an all-time high. That was
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it 85"—the major field training exer-
staged annually in South Korea.

eam Spirit is the largest in a series
of Joint Chiefs of Staff-directed
training exercises designed to help
tain interoperability and standardi-
n between the ROK and U.S. forces.
a two-sided, multidivisional exercise
lving all the services of both nations.
is year's Team Spirit, the tenth in
eries, included over 199,000 South
an and American forces. About 38,000
participants were in units deploying
outh Korea from Pacific bases and
ontinental United States.

r the first time in the series, safety
ncluded this year as a specific Team
goal. The command safety manager
d all U.S. augmentation forces prior
ir deployment. They were briefed on
oad, weather and other Korea-unique
ds that would be encountered and
ed on measures to help prevent ac-
ts. Commanders at every level em-
zed attention to safety throughout
eployment, employment and rede-
nent phases of Team Spirit 85.

e results were commendable: a 59-
t reduction in accidents of all types,
ercent drop in deaths and a 78-per-
reduction in injuries. There were
leaths during Team Spirit 85, while
ear 29 U.S. and ROK Marines died
tragic crash of a U.S. Marine Corps
pter, in addition to two other exer-
lated fatalities.

improvement in the exercise safety
is a tribute to the fine efforts made
l concerned, both American and
Korean. It enabled us to enjoy
effective training and also helped



A 2nd Infantry Division medic renders aid to a 'wounded' soldier with a lifelike amputation during a mass casualty exercise.

protect life and property in the maneuver areas where several million South Korean townsmen and farmers each year put up with, and welcome, the intrusion of Team Spirit forces into their lives and lands.

A major tactical innovation in this year's Team Spirit was the deployment of a brigade task force from the 7th Infantry Division at Ft. Ord, Calif., in its light infantry mode. "Task Force 7" headquarters and two battalions of light infantry were moved from California to South Korea by seven C-141s, two C-FAs and a chartered 747—a great contrast to the 22 aircraft needed in the past to move a similar force to South Korea.

From Osan Air Base, waiting C-130s flew the task force to an assault airstrip located in the center of the 1,500-square-mile maneuver area. From this airstrip, a 3,500-foot aluminum jigsaw puzzle pieced together by Eighth Army's 2nd Engineer Group, the bayonet troops made a tactical march to a site along the Nanhan River to await the field training phase.

During the exercise, Task Force 7's battalions operated almost like foot cavalry. Because they maneuvered without the large-size weapons or even the size of regular infantry battalions, they employed different tactics, such as attacking from the flanks instead of the front.

A 4,500-strong task force from the 25th Infantry Division in Hawaii, including division and brigade headquarters, participated in Team Spirit for the eighth time in 1985. The 25th Division is being converted to light infantry, so its participation in next year's Team Spirit will prove a great learning and training experience.

Team Spirit does more than provide challenging training. It is visible evidence of the American commitment and capability to assist in maintaining security and peace for the Republic of Korea. That assurance is important to South Korea's citizens.

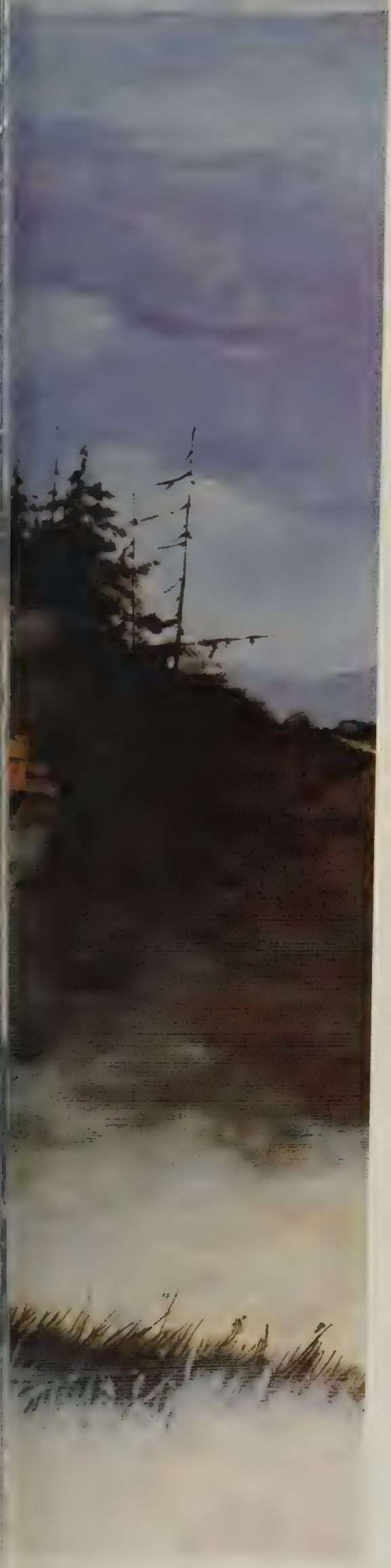
Their country has sprung vigorously from one-time poverty and the rubble of the 1950–1953 war to become a modern, industrialized nation with trade and other economic activity spanning the world. The people are justifiably proud of their achievements and steadfastly determined not to let North Korea diminish their rising expectations.

Americans contributed both blood and treasure in helping to bring about the opportunities that have been so well used by the South Koreans. We share their pride in what they have accomplished. Given the existing security situation, we must also continue to share the responsibility for the ROK's defense. That is vital if the United States is to be known as a consistent as well as a concerned ally.

While time certainly appears to be on our side, and we and the ROK use the time well, the possibility that North Korea may renew hostilities cannot be ignored. For Eighth Army, the challenge today is what it was before, and what it likely will remain for some years to come: to be prepared for war.

The courage and hard work of the dedicated soldiers in Eighth Army, and their partners in the other U.S. and ROK forces, are the core of the deterrent. These young men and women are better than ever. They will do what is right and necessary to carry out their nation's commitment to peace.


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LTV's design for Army TACMS extends the capabilities of the MLRS launchers to stop the second echelon of attacking forces. As an essential part of the nation's defense, Army TACMS will accomplish the goal of raising the nuclear threshold. The design is low-risk and cost-effective because the basic systems provided by the team members have flown successfully in 16 tests during *Assault Breaker* and prior technology flight test programs.

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L T V : L O O K I N G A H E A D

In an area of the world where U.S. national interests are directly threatened, the joint service forces of the U.S. Southern Command conduct wide-ranging programs of military cooperation with friendly Latin American nations, providing a favorable climate for the economic and political development upon which the security of the region ultimately depends.

Regional Coalition Vital To SOUTHCOM Efforts

By Gen. John R. Galvin
Commander in Chief,
U.S. Southern Command



Panama's Chagras River provides a challenge to soldiers in training at the Army Jungle Operations Training Center.

The U.S. Southern Command (USSOUTHCOM) area of responsibility incorporates most of the graphical land mass of Central and th America. Its three service compots—the 193rd Infantry Brigade (Pan) of the Army's Forces Command; U.S. Air Force Southern Air Division AFSO), a unit of Tactical Air Comd; and the U.S. Naval Forces South Command (USNAVSO), under the f of naval operations—provide the ority of the forces.

n a daily basis, there are about 6,700 ıy, 2,100 Air Force and 500 Navy Marine Corps personnel in Panama. ddition, there are 7,700 Department)efense civilian employees. Seventy- percent of the civilian work force is ımanian.

the remainder of Central and South rica, about 85 additional U.S. mili- personnel are permanently assigned the military groups (or equivalent) Latin American countries. These are e, Guatemala, Honduras, El Salva- Costa Rica, Panama, Venezuela, Co- ia, Ecuador, Peru, Bolivia, Argen- Paraguay, Uruguay and Brazil. This not include military attachés, Marine guards in the embassies, mobile training teams on temporary duty or those presently participating as part of the Joint Task Force Bravo in Honduras.

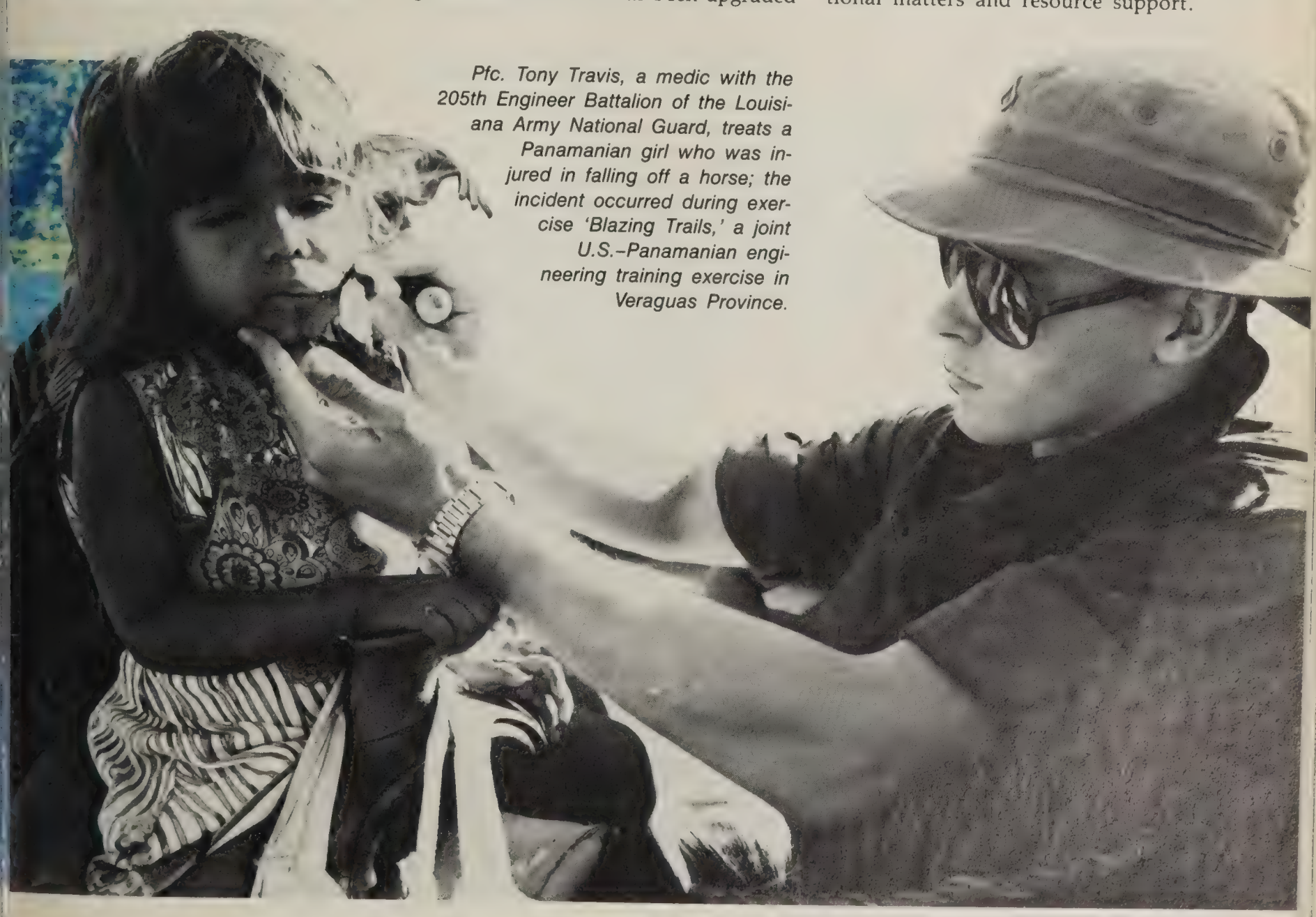
As a result of the Panama Canal Treaty of 1977, which assigns an increasing role for the defense of the Canal to the Panama Defense Forces (PDF), Army forces in Panama are completing a major realignment, enabling the service to better fulfill its responsibilities as a component for Headquarters, USSOUTHCOM, both in supporting nations in the region and in assisting PDF to perform their treaty-mandated Canal defense mission. One mechanized infantry battalion was inactivated and the 193rd Infantry Brigade's two remaining infantry battalions were reduced in size to correspond with the Army's new light infantry configuration.

The personnel savings from this reorganization were used to provide additional combat support and service capabilities more suited to the current missions and strategy of Headquarters, USSOUTHCOM. Specifically, intelligence, signal, medical, engineer and combat service support battalions have been realigned from company-level units, and the existing aviation battalion has been upgraded with UH-60A Black Hawks and improved medium-lift CH-47D helicopters.

The 193rd Infantry Brigade (Panama) Headquarters has been augmented with additional resources to better perform the expanded command and control functions associated with more diversified Army component duties under USSOUTHCOM.

This augmented organization, with no increase in total Army personnel assigned to Panama, will provide improved resource allocation, effective security assistance administration throughout Latin America, increased planning capability in support of USSOUTHCOM and significantly increased capabilities to conduct incidental civic action and humanitarian assistance programs in conjunction with combined exercises with the PDF and the armed forces of other nations in the region.

The Navy has within the past year, designated the naval component (USNAVSO) as a second-echelon command, whose commander reports directly to the chief of naval operations (CNO). This change provides for his direct access to CNO and other Navy commands for operational matters and resource support.



Pfc. Tony Travis, a medic with the 205th Engineer Battalion of the Louisiana Army National Guard, treats a Panamanian girl who was injured in falling off a horse; the incident occurred during exercise 'Blazing Trails,' a joint U.S.–Panamanian engineering training exercise in Veraguas Province.



The U.S. Navy in Panama is structured to provide fleet support to ships transiting the Panama Canal and operating in the region. USNAVSO also provides naval expertise in joint and combined planning, exercises and operations.

Navy activities in the region, especially in Central America, have increased in the past few years. The number of ship days at the Rodman Naval Station has grown some 20 percent a year since 1982. The Navy is the smallest of the components, with approximately 80 officers and 500 enlisted personnel.

The air component, the U.S. Air Force Southern Air Division, provides tactical air, airlift and training capabilities to the theater. The tactical air mission is accomplished by O-2A observation aircraft, A-7D attack aircraft and UH-1N helicopter gunships.

Airlift is a major portion of the USAFSO mission, using C-130 Hercules transports flown and maintained by crews from the Air Force Reserve and Air National Guard. Training is primarily accomplished by the Inter-American Air Forces Academy, which provides classroom and practical training for the air forces of Latin America.

USSOUTHCOM also has representatives throughout the region in the form of security assistance offices, usually called U.S. military groups. These offices provide an administrative liaison for security assistance programs, limited to equipment and foreign military sales case management, training management, program monitoring, evaluation and planning of the host nation's military capabilities and requirements, administrative support, and liaison functions exclusive of advising and training assistance.

The Panama Canal is a vital link in the Caribbean Sea lines of communication which are of strategic importance to the United States, as illustrated by the following:

■ Two-thirds of the oil imported by the United States, as well as many strategic minerals, pass through the Panama Canal or the Gulf of Mexico and the Caribbean Sea. Forty-five percent of the Alaskan crude oil going to the oil refineries and tanker port facilities in the region passes through the Panama Canal or the trans-isthmian oil pipeline across the western end of Panama (which permits the direct transfer of oil to supertankers too large to transit the Canal).

■ In wartime, about 60 percent of NATO's resupplies, petroleum products and many of the personnel reinforcements would transit by sea from the Gulf of Mexico ports through the Florida Straits and on to Europe.

■ The Panama Canal would be critical for the transfer of forces and logistics in support of a major contingency.

■ The Panama Canal is a key element in the economy of the region because of the facility for ocean-to-ocean transfer.

Thus, the security of maritime operations in the Caribbean region is vital not only to the security of the United States (including the security of NATO and our interests in the eastern Mediterranean area) but to all the nations of this hemisphere. A worrisome dimension today of the conventional strength of Cuba and Nicaragua is the potential for hostile military power to be used to restrict free access to the sea lines of communication.

USSOUTHCOM's long-standing mission of defense of the Panama Canal—dating back to a few years before the Canal's opening in 1914—has taken on new



GEN. JOHN R. GALVIN was named commander in chief, U.S. Southern Command, in February, after having commanded VII Corps, U.S. Army, Europe, since July 1983. He is a 1954 graduate of the U.S. Military Academy and taught English there for three years after earning a master's degree in English at Columbia University in 1962. Some of Gen. Galvin's earliest career was spent in Spanish-speaking environments, first with the 65th Infantry in Puerto Rico (1955–56) and then as a military advisor to the Colombian Army (1956–58). A holder of the Silver Star, he served two tours in Vietnam with the 1st Cavalry Division, commanding the 1st Battalion, 8th Cavalry, during 1970. Between tours, Gen. Galvin was military assistant and aide to the secretary of the Army during 1968–69. After returning to the United States in 1970, he served two years as chief of the publications and presentations branch of the old Army Combat Developments Command. After graduation from the Army War College in 1973, Gen. Galvin was in Europe for seven years, serving successively as deputy secretary of the U.S. European Command joint staff; military assistant to the supreme allied commander, Europe; commander of the Division Support Command and then division chief of staff with the 3rd Infantry Division (Mechanized); and assistant division commander of the 8th Infantry Division (Mechanized). After returning to the United States in 1980, he was assistant deputy chief of staff for training with the Training and Doctrine Command and then commanded the 24th Infantry Division (Mechanized) during 1981–83. A successful author, Gen. Galvin's published books include Air Assault: The Development of Airmobility *and two works on the history of the American Revolution.*

s under the Panama Canal Treaty of
7. The implementation of the treaty
1 October, 1979, ushered in a new
ionship with the Republic of Pana-
–a partnership in both the defense
operation of this great waterway of
ld commerce.

hile the primary responsibility for
nse of the Panama Canal during the
of the treaty remains with the United
es, the treaty mandates an increasing
cipation in this mission by the Re-
ic of Panama.

With the expiration of the Panama Canal Treaty at the end of this century, the U.S. military ence in Panama will cease, unless a agreement is reached. Under the accanying Treaty on the Permanent rality and Operation of the Panama l, Panama and the United States provide indefinitely for the perma- neutrality of the Canal.

meet their treaty-mandated Canal se mission, the Panama Defense s have recently begun force modern- n, organizational changes and expan- Originally established as the National e in 1904—the country's only armed s until the mid-1950s—the PDF's pre- sor (the Panama National Guard) organized as a paramilitary force has remained as such for the past ars.

e most recent steps in the prepara-



Hovering over Panama's Empire Firing Range, a CH–47 Chinook helicopter lands a 105-mm howitzer of the 193rd Infantry Brigade's 1st Battalion, 22nd Field Artillery.

A medic of the Puerto Rico Army National Guard lifts a protesting child from her father's arms during exercise 'Blazing Trails' in Panama's Veraguas Province.



tion to assume the full mission of Canal defense by the year 2000 have been the reorganization of the Panama National Guard into the Panama Defense Forces and the creation of "Battalion 2000" as the first battalion in the new PDF structure. Both occurred in 1983, with Battalion 2000 being generally patterned on a U.S. infantry battalion.

Events in the region in the 1980s, which have clearly demonstrated that U.S. vital interests are being strongly challenged, have caused a dramatic change in the missions and activities of USSOUTHCOM. With the PDF's increasing role in the Canal ground defense mission, more emphasis is now being placed on the coordination of a wide range of regional activities intended to enhance hemispheric security through foreign internal defense and development.

This change in emphasis can be viewed as a realization that the Panama Canal can only be secure so long as there is regional economic, political and military stability. Hence, in today's strategic equation in this region, defense of the Panama Canal starts thousands of miles from the Isthmus of Panama with good intelligence, broad-area surveillance, long-range reconnaissance and the capabilities for maritime and aerial countermeasures by the United States, along with force expansion and modernization in the PDF.

USSOUTHCOM's new focus is to provide important military support for the creation of a security shield in the near term and to foster coalition within the region for the future, so that the struggling countries can concentrate on, and assist each other with, the urgent business of nation building, economic development and institutionalization of human rights and democratic values.

This new focus is predicated on vital U.S. strategic interests, which include promoting the growth of democracy, fostering economic growth and supporting political stability, among others.

In 1979, two-thirds of the people in Central and South America lived under military or military-dominated governments of the left and the right. Since 1980, military juntas have turned back control of governments to civilians in eight countries.

Today, over 90 percent of the people of mainland Latin America are living in democracies. Brazil, Bolivia, Honduras, Peru, Argentina, Panama, El Salvador and Uruguay are all now governed by openly elected presidents and legislatures (as are Venezuela, Colombia, Ecuador, Costa Rica and Mexico). Guatemala held legislative elections in 1984 and has presidential elections scheduled for fall of 1985.

On the other hand, there are deliberate efforts to export revolution in the region. The Soviet Union pours nearly $5 billion a year into Cuba, much of which serves to support a military establishment second in size only to the United States and Brazil in the Western Hemisphere.

The Sandinistas in Nicaragua have been recipients of this aid since 1979 and have been supported by the Soviets and their satellites to an amount in excess of $1 billion in the last three years. This has been divided about equally between economic and military aid. There are at any one time over 2,500 Cuban military advisors in Nicaragua, and there have been as many as 10,000 Cuban advisors at all levels of society present in that country.

That Nicaragua has become distinctly militaristic and is aggressively exporting revolution to other countries is attested to by both its actions and words. The export of revolution, the infiltration of arms, the deliberate attempts to train guerrillas and terrorists and the attempt to subvert the legitimate governments of their neighbors have all been extensively reported and documented.

From a purely conventional point of view, the Sandinista army is the largest, most sophisticated military force in Central America and out of all proportion in size and quality to those of the neighboring countries. This in and of itself serves to intimidate its democratic neighbors, forcing them to reprioritize scarce resources in combating the perceived threat.

The Sandinistas blame the United States for their inordinate arms build-up. Yet the first foreign assistance from the United States arrived on 22 July, 1979, three days after they assumed control. During the next two years, the United States was the largest single bilateral supporter (having provided $118 million in economic assistance from July 1979 through April 198 and the strongest supporter of multilateral aid.

Nicaragua is in dire economic straits however. It suffered a major trade deficit approaching $400 million last year. Its foreign debt is about $3.5 billion, which takes all of their $400 million in export earnings to service. The *commandantes* missed one payment on a $7 million loan from the World Bank. Yet in the face of this, they continue to spend $500 million annually to keep 100,000 under arms. That is about 25 percent of their national budget.

Prosperity and political stability



Resupply operations take place on the beach during the 1984 amphibious exercise 'Operation Blue Blade' on Panama's Caribbean coast.

closely aligned interests. The Caribbean region remains debt ridden and depressed. Honduras in Central America is the second most economically depressed country in the Western Hemisphere.

Prosperity in the Caribbean Basin is important to the United States because this region is our fourth-largest trading partner, with annual imports and exports of about $34 billion each. The area represents 10 percent of U.S. foreign investment and 72 percent of U.S. foreign investments in the Third World. Additionally, U.S. banks hold about $130 billion in debts centered in the Caribbean Basin.

Latin American nations are among the top three producers of antimony, bau





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Negotiating an obstacle course at the Army Jungle Operations Training Center, Ft. Sherman, Panama.



An Iowa-class battleship takes on provisions at the U.S. Naval Station, Panama.

copper, manganese, nickel, petroleun silver and tin. The United States impor approximately 34 percent of its oil, 4 percent of its iron ore and 96 percent its bauxite from the area.

Instability and poverty create the se ous problem of migration. Today, o out of every two new Americans is a immigrant. Nine out of ten come fro the Caribbean Basin; many are illega More than one million Central America have emigrated to the United States. Salvador alone accounts for almost 500,0 —that constitutes 10 percent of its indi enous population of five million. Toda the United States has the fourth-large Spanish-speaking population in the We ern Hemisphere. By the year 2000, it w be the second largest.

The problem of immigration is n unique to the United States. All the cou tries of Central America share the pro lem. There are refugees from Nicarag in Honduras and Costa Rica and refuge from El Salvador in Honduras, Gua mala and Costa Rica. Panama, too, becoming concerned with the immigrati problem. This problem is symptomatic the continued pressure of exported re lution and the existence of low-intens conflict in the region, particularly in Salvador.

The problem is not easily solv At present growth rates, by year 2000 Latin America will h more than 540 million people. Mex alone will have more than 120 milli Mexico City today has more than 17 m lion, with 40 percent under the age of and an annual population growth r approaching 3 percent.

Narcotics trafficking is a problem t North, Central and South America sh which our ancestors did not. In the Un States alone, between $50 billion and billion, or about $350 per capita, is sp annually on illegal drugs—more than annual per capita income of some of countries in this region.

The illegal drug trade between United States and Colombia alone counts for one-half of the U.S. mar More than 75 percent of the cocaine 50 percent of the marijuana sold in

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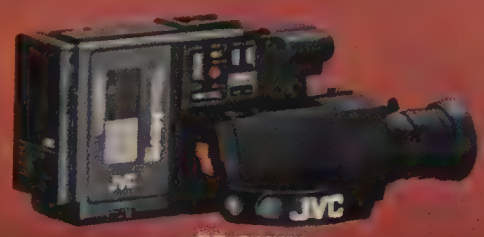
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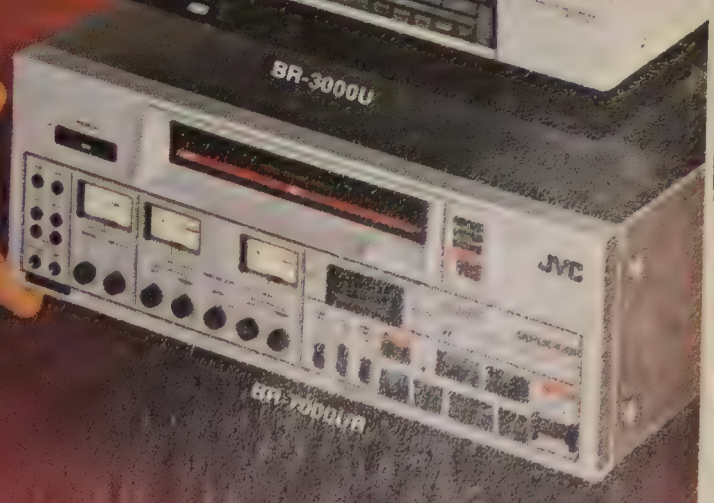
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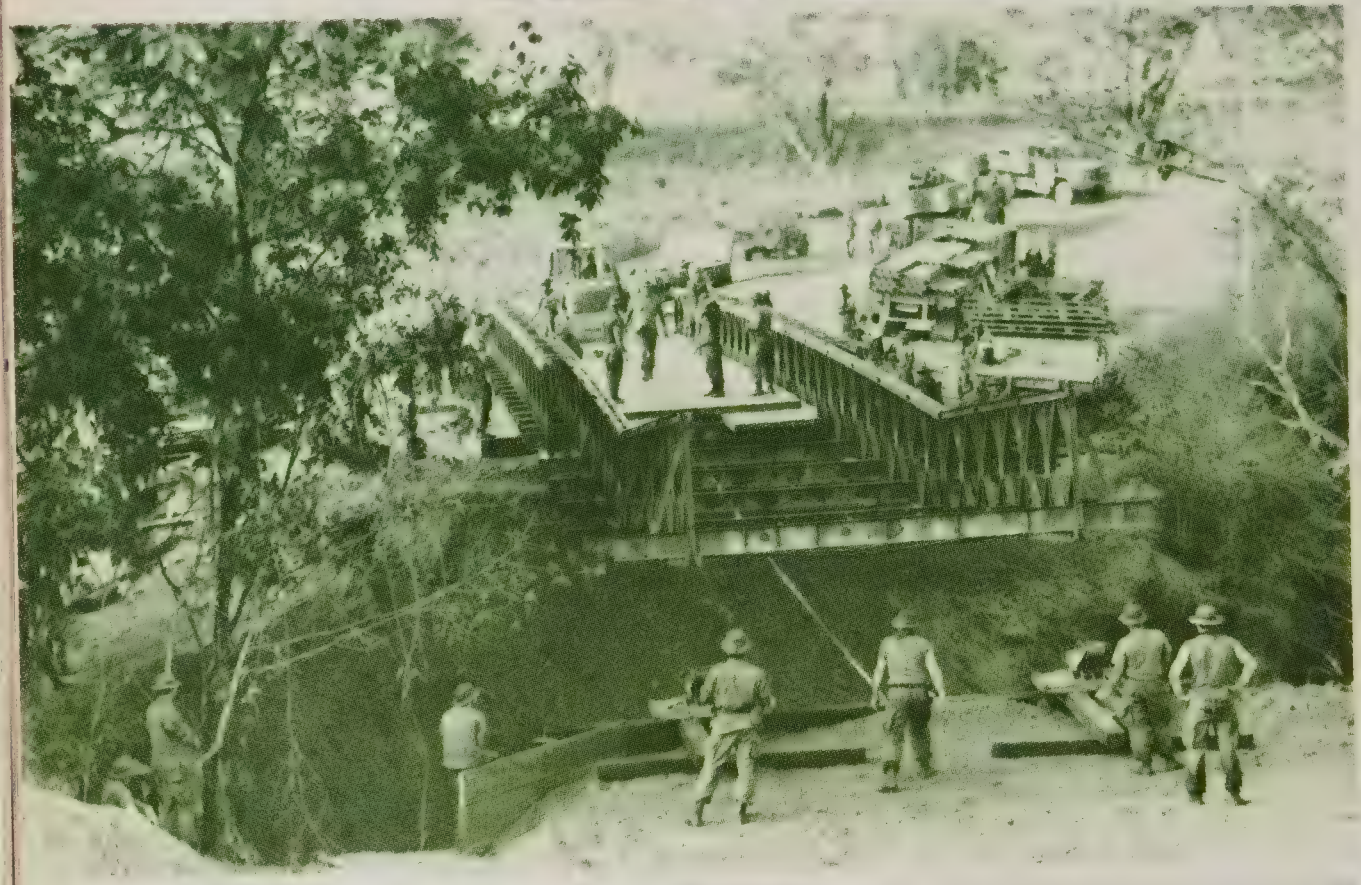
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A staff sergeant instructor (right) *assists a Honduran infantry officer in a demonstration during an inter-allied jungle operations conference at the Army Jungle Operations Training Center, Ft. Sherman, Panama.*



Army National Guard engineers erect a Bailey bridge, one of 12 gap crossings made while building a new road in Panama's Veraguas Province, in the joint U.S.–Panamanian engineering exercise 'Blazing Trails.'



A machine gunner of Panama's 193rd Infantry Brigade checks the field of fire for his M60 during field training.

United States come from Colombia. T drug traffickers are directly involved subverting legitimate governments, a there is substantial evidence linking dr trafficking, arms smuggling and indi nous insurgents.

Having identified some major intere which USSOUTHCOM can and d serve, I now turn to four primary acti ties which it pursues.

The first is security assistance. This provided through foreign military sal foreign military sales credits, military sistance programs and international m tary education and training funds.

The military groups, those 85 p manently assigned personnel Central and South America, responsible for the monitoring of this p gram. The total amount of security as tance for Latin America in fiscal 1 was about $200 million. This represe about 25 percent of the amount of e nomic aid provided in the region. terms of worldwide total U.S. milit aid, it represents about five percent.

The second activity is intelligence sh ing. By cooperating with the countrie the region, we can more effecti counter subversion and terrorist act ties, in a determined effort to create conditions for the growth of democr and prosperity.

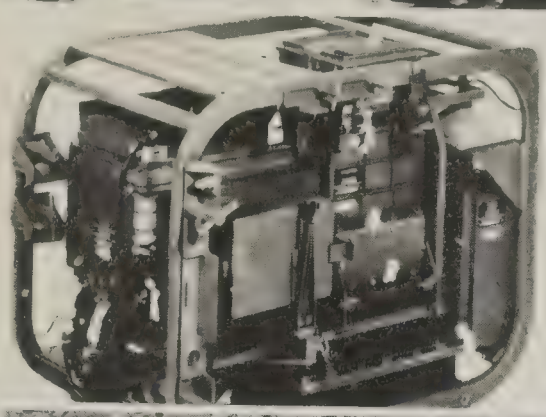
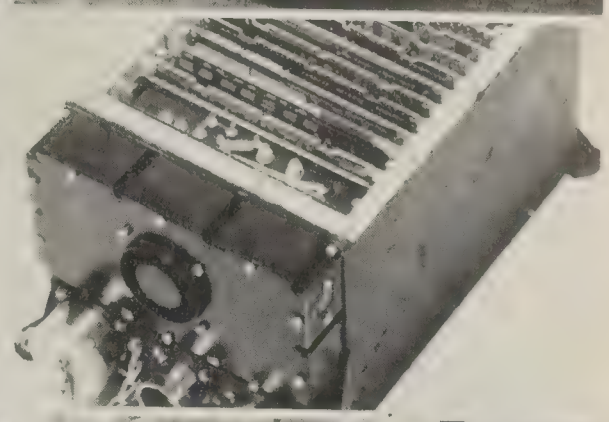
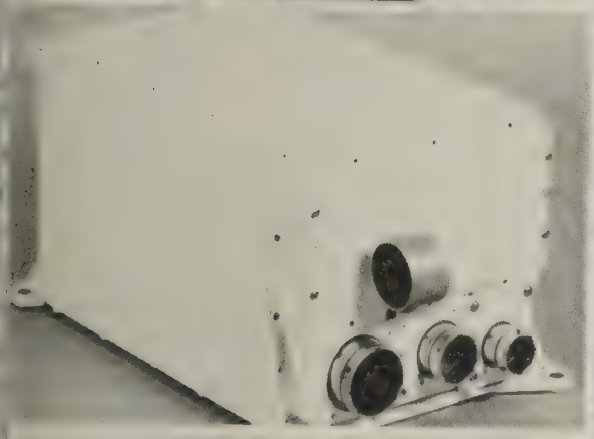
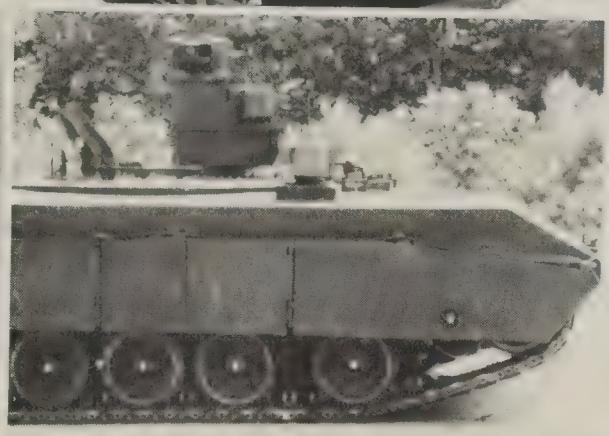
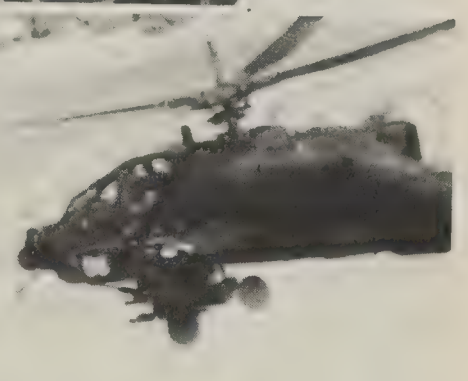
The third activity is conducting j and combined exercises. The primary jectives of these exercises is to pro realistic training opportunities for own forces, to enhance professiona and interoperability, to create greater operation among our respective fo and to enhance defense and developm

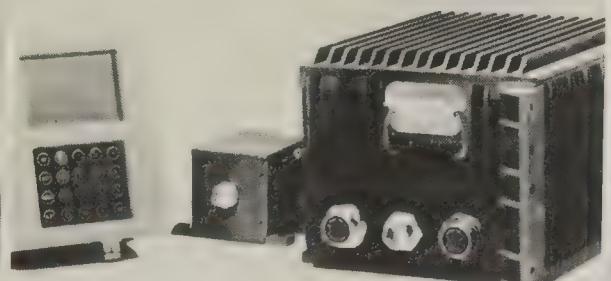
In the last two years, these exer have been principally with Panama Honduras. "Kindle Liberty," the an Panama Canal defense exercise, invo about 10,000 U.S. military in 1983, f both Panama-based and U.S.-based u and a proportionate number of the P ma Defense Forces. Panama's partic tion has increased each year. This y Kindle Liberty exercise—for the first conducted outside the immediate Pan Canal area—saw the largest PDF pa pation to date.

There have been several principal e cises with Honduras in the last three y *"Desplacemiento Combinado," "A Tara* (Big Pine) *I," "Ahuas Tara II," " nadero I," "Ahuas Tara III"* and, cur ly, *"Post-Granadero I."* During the c of these exercises, we incorporated a variety of activities, to include engi








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The Bridge of the Americas at the Pacific entrance to the Panama Canal frames Navy small craft and a UH–1 helicopter patrolling during 'Kindle Liberty,' the 1985 U.S.–Panamanian canal defense exercise.

ing, artillery training, antitank operations and medical readiness training exercises. We have been successful in making maximum use of Army National Guard assets and thus providing realistic training for the Guardsmen.

The fourth activity is humanitarian assistance. Central America is in many ways like other parts of the Third World, and the same stories of human tragedy are found there. We assist regional countries in developing and upgrading their humanitarian assistance capability, and we conduct these activities as an incidental part of training programs for our own forces. These activities may include well digging, medical readiness training or a road construction exercise.

USSOUTHCOM has had a series of ongoing medical training exercises in Hon-



A Honduran farmer's cart yields the right-of-way to a column of M60A1 tanks of the Texas Army National Guard's 49th Armored Division, which conducted antiarmor exercises with the Honduran army in 1984.

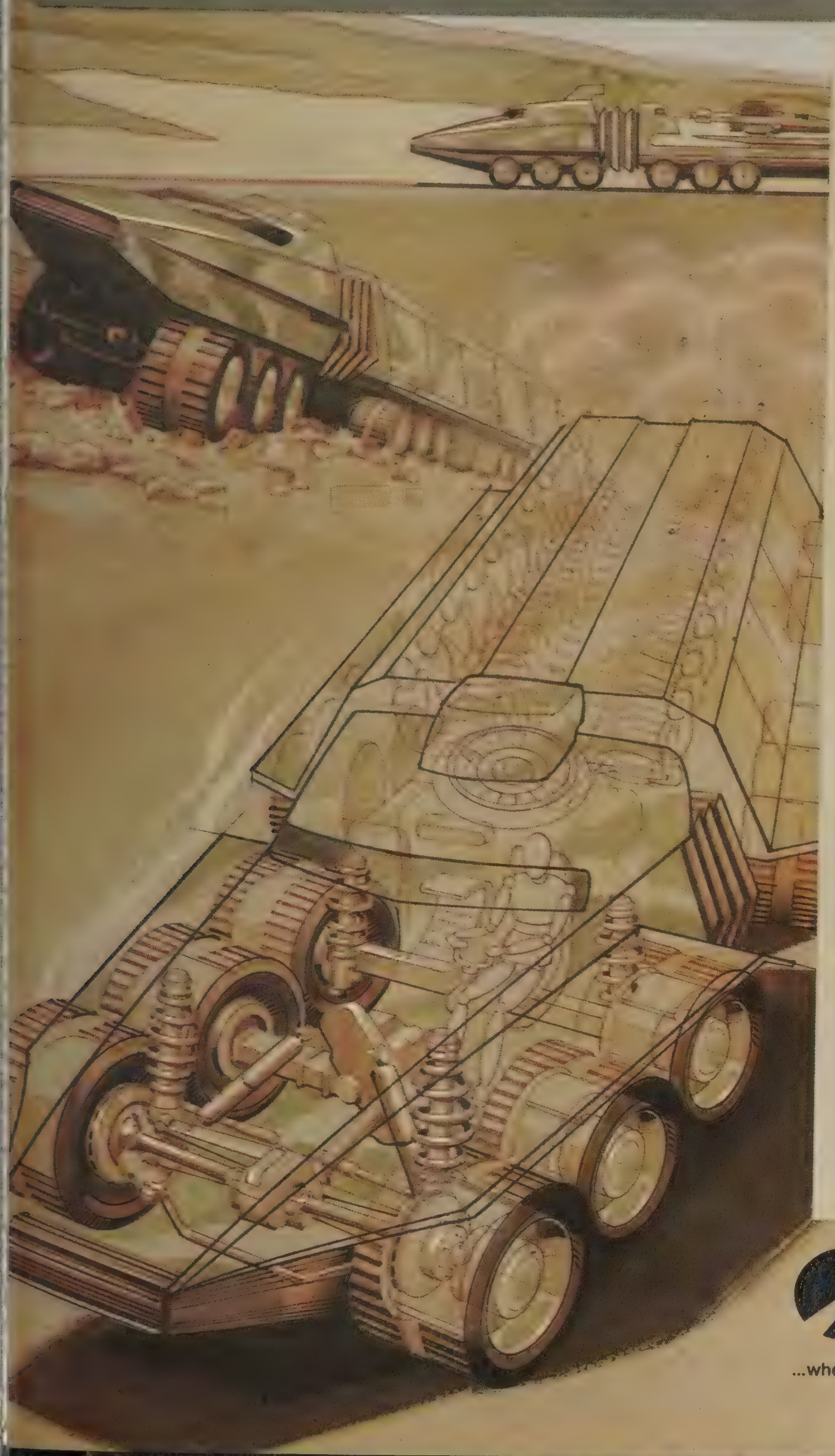
duras, which provided for our own do tors a realistic study of tropical medici and served to improve the health sta dards of others. Also under USSOUT COM auspices, the Army National Guar combined with the Panama Defense Forc completed in May of this year an eigh month, 26-mile road construction proje ("Blazing Trails" combined engineer tra ing exercise) in a remote region of Par ma some 150 miles southwest of the Pa ama Canal area.

Approximately 10,750 Army Natio Guardsmen from nine states and Pue Rico participated in the project since inception in February 1984—the vast m jority of them rotating to Panama their 17-day annual training. Not o was invaluable training gained, but project provided transportation for p ple who had previously experienced gr difficulty in moving their products market and seeking medical care.

In addressing Central America and Caribbean Basin, the National Bipartis Commission on Central America (the K singer Commission) concluded that terms of the direct national security in ests of the United States, this country large stakes."

The U.S. interests, which we supp through our initiatives, are coincide with most if not all of the nations in region. Acting alone, we cannot ass these. Acting together in a regional co tion, we can.

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'Give Us the Resources And We Will Do the Job'

By Maj. Gen. Herbert R. Temple Jr.
Director, Army National Guard

National Guard units have long been part of the Army's front-line deterrent forces; the necessary resources—money, manpower, training time and equipment—are now catching up with the mission





An operations officer of California's 40th Infantry Division (Mechanized) marks a maneuver map.

he Army National Guard (ARNG) continues on its path, achieving high levels of readiness. The successes of past several years are clearly a Total y effort.

rough the continued cooperation of Department of the Army, Forces Com- (FORSCOM), the states and terri-s, and all Army major commands, the y National Guard is emerging as a de-able and reliable partner on the na- security team. As we congratulate lves on our success, however, we never forget that our achievements been through the commitment and nal sacrifices of the men and women serve in the troop units of the Army nal Guard.

r mission is to deter war through th. If that is not enough, we must and win. In both instances, our sol- must pay the price. We build our ams and allocate our resources to rt our soldiers.

National Guard is a unique military that is deeply ingrained in the mic and social life of more than 2,600 unities in our nation. The 3,350 of the Army National Guard are in instances a vital part of the history ir state and region. Generations of es have served in Guard units in and war. To understand the pride otivation that serves the National Guard, it is essential to recognize the cohesion and esprit that comes from friends and neighbors striving together for mutual satisfaction and protection.

This combination, along with its heritage of patriotism and valor in battle, gives the Guard its meaning and purpose, and establishes a military foundation seldom found even in the regular forces of the world. Our challenge is to focus this combination of remarkable factors to serve the nation's security interests.

Training is the single element which synergizes the capabilities of the Guard for this purpose, but training alone will not provide the necessary product. Equipment is an essential ingredient. In past wars, there has been time for development and manufacture of weapons that allow our soldiers to gain victory and preserve themselves in battle.

Today's threat is different. Guard units will not have time or distance from the enemy to marshal before the battle. We must have the necessary equipment on hand or readily available for peacetime training or to use in battle within days or weeks of mobilization.

Although training and equipment are unquestionably vital to a military organization, there are other elements which affect its utility. The Army National Guard is aggressively working to bring the following divergent elements together: the continuous maintenance of strength with quality personnel, the routine support of the physical needs of our soldiers and their families while they are on duty, and a sophisticated and functioning management system to allocate and use the nearly $5 billion in federal money provided for the Army National Guard. Management of the money must meet day-by-



A helicopter crewman of California's 40th Infantry Division (Mechanized) works to secure his craft at a maneuver landing ground.

wledging a training success from M113 armored personnel carrier ese troopers of the Kansas Army al Guard's 69th Infantry Brigade, nfantry Division (Mechanized): onald Varga (left), *Company D, Support Battalion, and S.Sgt. Bolen II, Troop E, 114th Cavalry.*

day peacetime needs and be fully integrated into active Army systems in the event of war.

Any story about the Army National Guard should begin with its people, its most important ingredient:

■ The Army National Guard began fiscal 1984 with an assigned strength of 417,791. Working in a difficult recruiting environment, Army Guard strength went down during the first four months of the year, reaching a low of 413,499 in January 1984. A major recruiting program was initiated during the remainder of the year, resulting in a record assigned end strength of 434,702, 100.3 percent of authorization. Commissioned/warrant officer strength was 41,847, and enlisted strength was 392,855. The total represented a net gain of 16,911 over fiscal 1983.

■ Minority representation increased in fiscal 1984 to 114,850, or 26.4 percent of total strength. Blacks made up 17.2 percent (74,635), and women accounted for 5.2 percent (22,538) of total strength. Minority officer recruiting increased that percentage to 9.5.

■ The fiscal 1985 strength objective is to achieve an Army Guard year-end paid strength of 438,383 (43,751 commissioned and warrant officers and 394,632 enlisted). As of April 1985, paid strength was 431,929. This figure does not include 1,515 enlisted personnel awaiting training without pay.

■ Personnel quality remains high among enlistees with no prior service. As of March 1985, 71.4 percent of these accessions were high school diploma graduates, and only 7.8 percent were in mental test category IV.

■ Retention is strong. The Army Guard is retaining 76.2 percent of its programmed ETS (expiration term of service) personnel. Our losses prior to ETS remain a matter of concern but a reduction from 75 percent in fiscal 1984 to 65 percent in March 1985 is encouraging.

■ MOS (military occupational specialty) qualification among enlisted members was at 75 percent at the beginning of fiscal 1985. Our objective in fiscal 1985 was to improve MOS qualification to 90 percent. Through command emphasis, by April 1985, the MOS qualification had climbed to 78.5 percent.

■ With few exceptions, the Army Guard is employing full ASVAB (armed services vocational aptitude battery) testing.

■ We anticipate the new GI Bill will have a significant impact on recruiting and retention in the Army Guard and should raise the quality of accessions.

■ The selected reserve incentive program contributes to maintaining the required number of people with critical skills (combat and combat support) in high-priority units.

■ Leadership enhancement is being pursued in concert with the Adjutants General Association. The state adjutants general have formed a work group to define and expand on leadership initiatives throughout the Army Guard.

■ The Army Guard officer corps continues to rely on the states' OCS (officer candidate school) programs for the majority of its officers; however, increasing reliance is being placed upon the ROTC to meet Guard requirements. Over 220 Army Guard officers are serving on college campuses across the United States as assistant professors of military science. They help tell the Guard story to ROTC cadets. State and ROTC relationships have been fostered to better inform ROTC students about the value of Army Guard service.

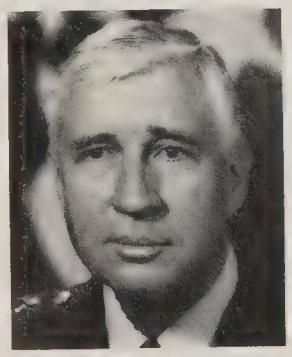


The Army National Guard is serv by five full-time forces:

■ Military technicians are civil serv employees who, by the nature of th work, must normally maintain act membership in a Guard unit in a M compatible with their full-time duty p tion. The 1985 military technician stren is 24,119, all of whom are active me bers of the Army National Guard. M tary technicians account for 43 perc of the full-time support program.

■ Active Guard/Reserve (AGR) p sonnel serve in Guard units or with tive component agencies and headqu ters. Personnel in the states serve in a time National Guard duty status with tive duty pay and benefits. More managed by their respective state a tants general in accordance with Natio Guard Bureau regulations and polic Other AGR personnel serve as any m ber of the active service under the s provisions of law and regulations. A increases are expected to bring the f to 30,679. This will equate to 55.3 cent of the full-time support progra

■ Active Army personnel who s with Army Guard units or functions rently include 62 on the National Gu Bureau staff, 35 in the states as ins



MAJ. GEN. HERBERT R. TEMPLE JR. became director of the Army National Guard in August 1982, after four years as deputy director. He enlisted in the California National Guard in 1947 and saw combat in Korea as a noncommissioned officer in the 24th Infantry Division. Gen. Temple received a direct commission in the National Guard in 1952 and for the next 22 years held command and staff positions at all levels, mostly in the 40th Infantry Division. He was military assistant to the governor of California during 1968–71. An officer and part-owner of a trucking company in civilian life, he was a member of the governor's staff during 1971–74 as director of the California Office of Emergency Services. Gen. Temple commanded the 40th Division's 3rd Brigade in 1974, then moved to the National Guard Bureau in 1975, serving as chief, Office of Mobilization Readiness, and from 1976 as chief, Office of Policy and Congressional Liaison. Gen. Temple is a graduate of the Army War College and holds a bachelor's degree from Golden Gate University, San Francisco, and a master's degree in public administration from Shippensburg University, Pa.

general and 138 in Army Guard units art of the full-time manning program percent of that program).

There are 424 Department of the ny civilian employees principally sup- ing the National Guard Bureau. These ians make up 0.9 percent of the full- support program.

Some states provide state personnel upport their National Guard. These ole generally work in administration, stics and financial management.

accordance with congressional and ny chief of staff direction, our thrust develop a fully trained and profes- ally competent full-time force ca- e of meeting peacetime and wartime ands.

satisfy congressional guidance, we separating the functions of military nicians from those of the AGR force. Rs will be essentially assigned to units, e military technicians will be centered in support, supply and maintenance activities.

A relatively unknown element of our manpower program is referred to as the "tour program." These Guard members serve on active duty at DA, joint and combined and unified staff, Army major command headquarters, installations, ROTC units, agencies and units in support of Army Guard programs. These officers and NCOs meet the same standards prescribed for active Army members and are fully integrated into active programs and functions. At present there are 788 officers and 194 enlisted personnel in this program. They serve throughout the Army in the continental United States (CONUS), South Korea, Japan, Panama, West Germany, Belgium and Italy.

The full-time support program is a key element of the Guard's readiness initiatives. As the force expands and resources increase, it falls to the full-time members to lead and manage the Guard's programs.

Some people still perceive Army National Guard training as meeting one weekend per month in an armory and two weeks each summer for nearby field training. Today's Guard is far removed from that old image.

ozers operated by Louisiana Army nal Guard engineers at work on a road along the Pacific coast in a te section of Panama's Azuero nsula, part of the 1984–85 ise 'Blazing Trails.'



Our soldiers consider themselves professional and want to play a key role in national security. As these highly motivated Guard members participate in meaningful and realistic training to extend their skills and stamina, it is gratifying to see their pride in accomplishment in what others have said could not be done by Guard members. It is these kind of men and women who come into the National Guard and "stick with it." Training is our best recruiter and retainer.

The years 1984 and 1985 continue to reflect a vitalized Army Guard force which achieved its training objectives and won recognition for a high state of preparedness and proficiency. During the past two years, six battalions (five mechanized and one armor) of the Army Guard have experienced the dynamic, realistic training rigors of the National Training Center (NTC) at Ft. Irwin, Calif. These units trained as an integral part of the Total Force with their active component "roundout" commands. In addition, more than 2,500 Guard members experienced the NTC environment while participating with active Army units in their MOS as part of the "key personnel upgrade program" (KPUP).

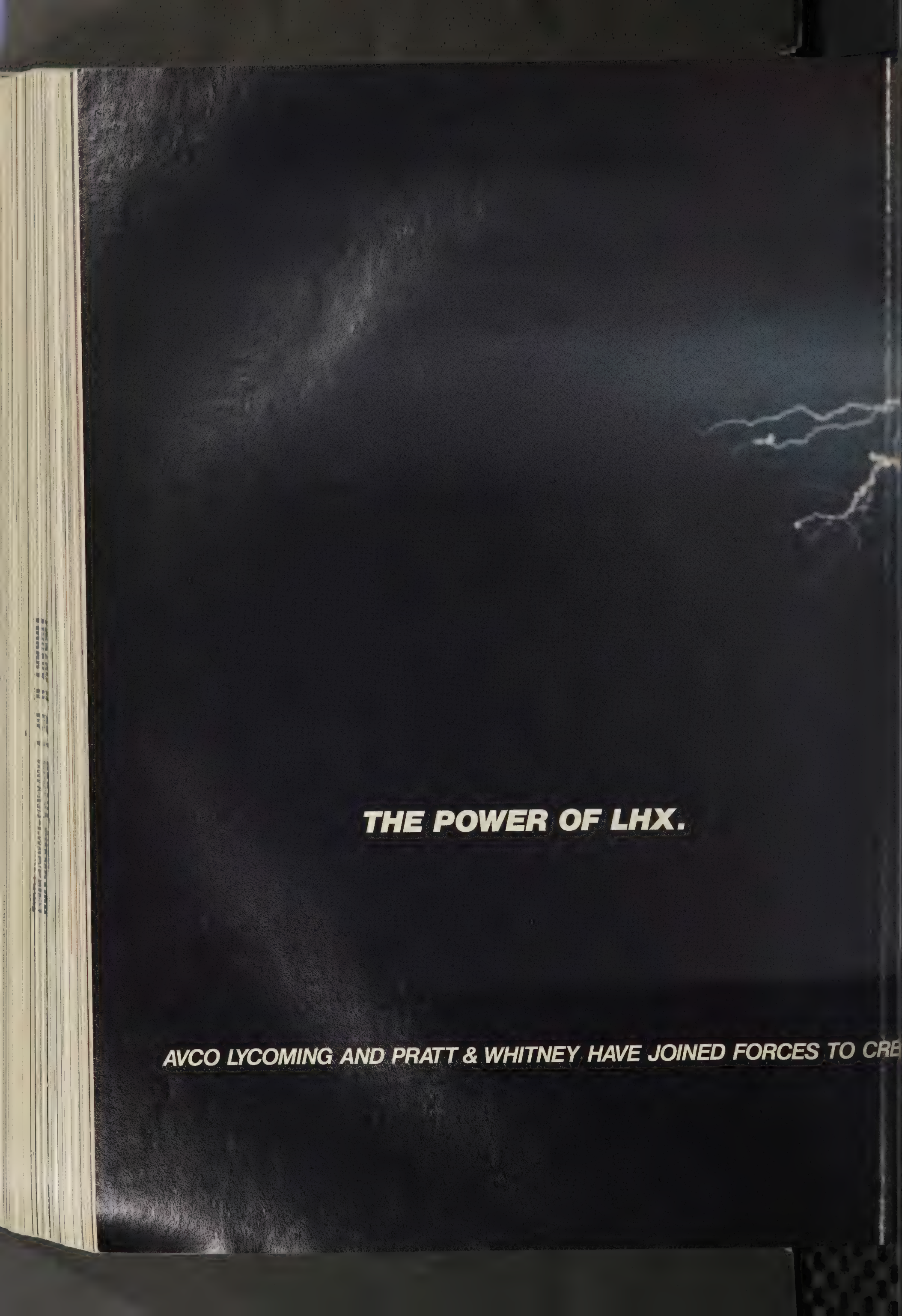
KPUP is a program which provides an opportunity for Army Guard members, exclusive of their annual training requirements, to integrate into active units to practice their MOS on the most modern equipment in tactical environments.

Does a Guard member just train the prescribed 39 days per year (weekend drills and two weeks of annual training)? For fiscal 1984, officers averaged 66.3 paid days of training yearly, while enlisted members completed 46.1 days. This survey did not count unpaid hours of correspondence school study or other volunteered time.

A higher level of external ARTEP (Army training and evaluation program) unit evaluations is being conducted, an increase from 61 to 81 at the battalion level from fiscal 1984 to fiscal 1985. During fiscal 1985, 22 companies and 11 battalions participated in three-week annual training periods.

"Training up" continues in the Army Guard. As an example, the 40th Infantry Division (Mechanized) conducted a force-on-force scenario that allowed the entire division to train as it would fight—as a division. Operations were conducted in real time over extended distances.

Exercise "Blazing Trails" involved Army Guard units from ten states that com-


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bined efforts with the active Army, the Army Reserve and the Panama defense forces to continue the construction of a road started last year in the Republic of Panama. In addition to maintaining the ten miles of road previously constructed, Guard engineers built more than 16 miles of new road through extremely rough terrain.

During the exercise, participating units conducted volunteer, off-duty community relations activities such as improving school buildings, distributing clothes donated by local communities in the United States and other projects. Medical assistance to residents of the area was provided by exercise medical personnel incidental to the military mission. The local residents were very vocal in their support of U.S. activity in the area.

The exercise was designed to provide realistic, environmentally unconstrained engineer training, tropical medical training and LOTS (logistics over-the-shore) training not available in the United States during stateside annual training. Almost 10,000 Army National Guard members participated in this exercise.

FORSCOM regulations currently state that an external ARTEP evaluation at company level should be conducted every two years. This regulation is under revision and, when published, will reflect a requirement for company-level external ARTEP evaluations every three years. The requirement for company-level external ARTEP evaluations does not preclude achievement of higher levels of collective training. In fact, higher levels of training and evaluation are strongly encouraged. Table 1 is a comparison of external ARTEP participation levels for fiscal 1983 through fiscal 1985.

Table 1

Level	Fiscal 1983	Fiscal 1984	Fiscal 1985
Brigade	0	2	0
Battalion	46	61	81
Company	348	432	545
Separate platoon/detachment	45	45	75
Total	439	540	701

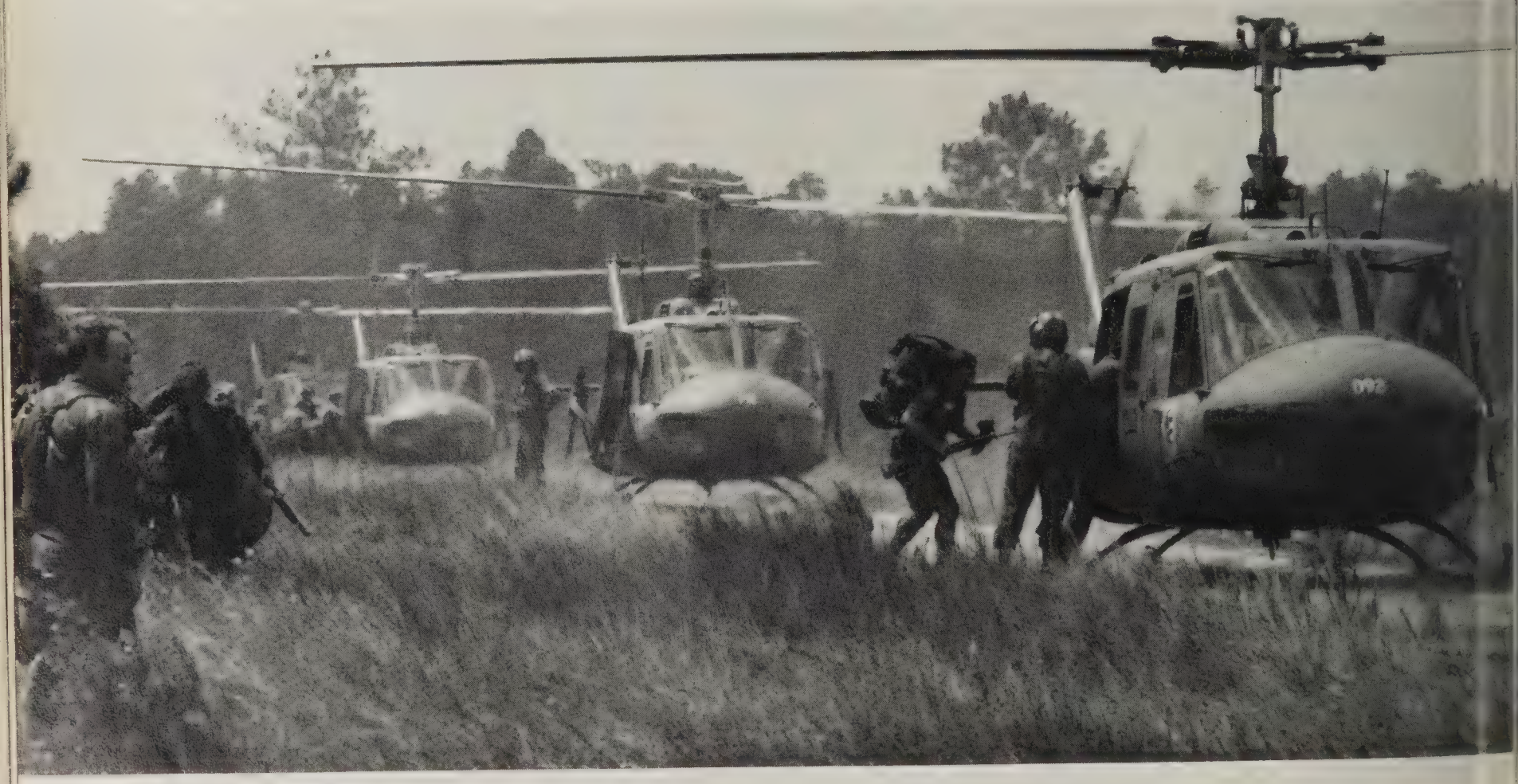
An increasing number of ARNG units are participating in three-week annual training periods. Mostly, these extended training periods result from participation in programs such as rotational training at the National Training Center, new equipment training for major items of equipment and overseas exercises. In addition, selected units are authorized three-week annual training periods for readiness enhancement and sustainment purposes and in order to support tank gunnery without gradually decreasing collective training during the normal annual training period. Participation is described in Table 2.

Table 2

	Company	Battalion
Fiscal 1982	1	0
Fiscal 1983	10	5
Fiscal 1984	11	5
Fiscal 1985	22	11
Fiscal 1986	30	16

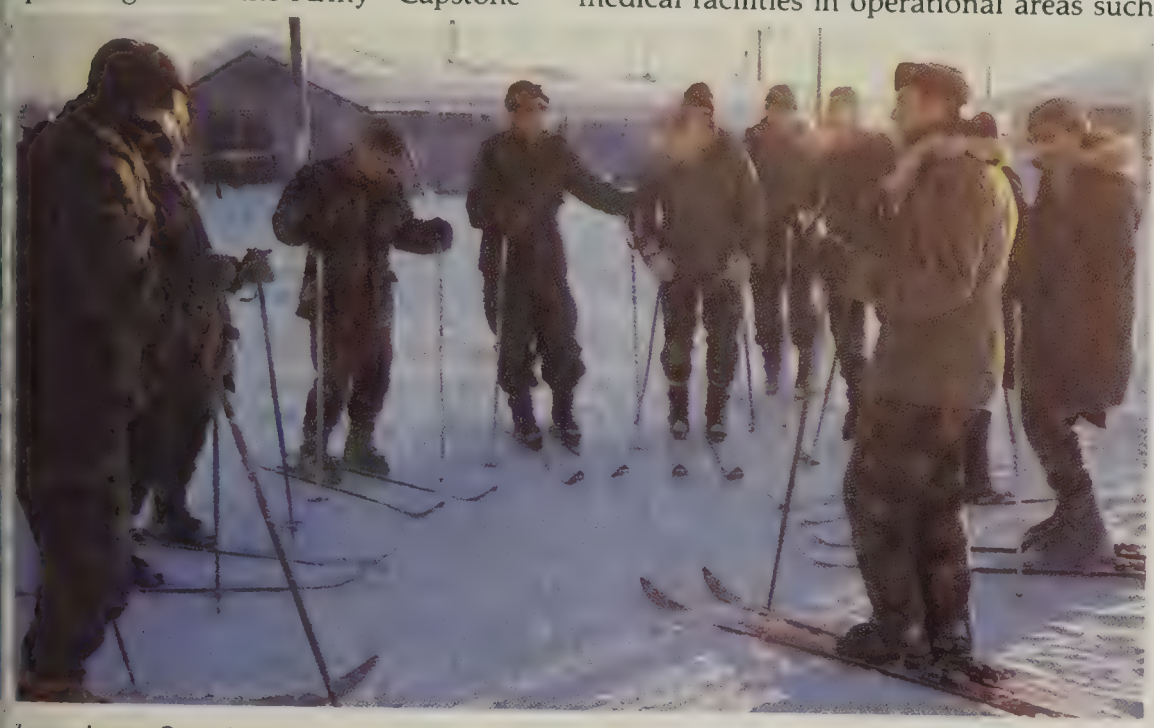
Commencing in fiscal 1986, the Army National Guard will initiate a tank modernization program which will replace all of our earlier M48- and M60-series vehicles with M60A3s by the end of fis 1990. The remainder will be M1 tan Armor battalions and cavalry squadr will be rotated in DAMPL (Departm of the Army master priority list) seque through Gowen Field, Idaho, to rece M60A3 training. In fiscal 1987, an ac tional training site will be activated the east to assist in training units. E site will train approximately seven b talion equivalents a year. The transit training for this new equipment will quire no more than a normal two-w annual training period for each affec company.

The overseas deployment training (O



gram provides ARNG units the op-
tunity to conduct wartime mission
nning and training in their contingency
a with their wartime gaining com-
nd. Excellent environmental and AR-
mission training opportunities are
available through ODT. During fis-
1984, 469 ARNG units or unit cells,
prising 7,700 Guardsmen, participated
DT. The fiscal 1985 schedule included
units/cells, comprising 21,700 per-
nel, training in Europe, South Korea,
n, Africa, the South Pacific, Central
erica and Southwest Asia.

RNG participation in exercises pro-
s highly desirable combined arms
ning and mobilization training. Exer-
participation affords excellent, highly
sful training programs. As a result of
continuing refinement of wartime mis-
planning under the Army "Capstone"



*hese Iowa Guardsmen took to skis dur-
ing the 1985 edition of the 'Brim Frost'
series of exercises in Alaska.*

*ymen of the Florida Army National
's 53rd Infantry Brigade practice air
t procedures during summer train-
Camp Blanding, Fla.*

program, ARNG units are selected for exercises based on their contingency mission. During 1984, 284 units or unit cells participated in major exercises worldwide.

"Task Force Texas" involved 419 members of the Texas Guard who trained with Honduran army troops in a simulated armor attack on that country's southern border with Nicaragua, and 111 members of an Illinois artillery unit spent their annual training in Honduras for side-by-side training with the Honduran army.

The National Guard Bureau is conducting a number of KPUP programs for hard-to-train skills such as practical military experience for our doctors, dentists, nurses and medical technicians. Many of these personnel will be afforded opportunities to perform either annual training or additional training working in U.S. medical facilities in operational areas such as West Germany, Italy and South Korea. Similar programs are being conducted for chaplains, maintenance and signal personnel.

Army Guardsmen from 38 units, comprising 2,466 personnel, participated in "Reforger 84." ARNG participation included Iowa's 224th Engineer Battalion that drew prepositioned equipment, and the 280th Signal Battalion of Delaware, Connecticut and Rhode Island, which shipped their equipment by sea. Additionally, 96 ARNG personnel deployed and trained with the 5th Infantry Division (Mechanized) under the KPUP program during that division's participation in Reforger 84, 82 personnel deployed with the 2nd Armored Division under KPUP, and 92 personnel trained in Reforger with European-based units under KPUP.

The tempo for European training did not slow following the 1984 cycle. Approximately 1,300 Guard members from 12 states were involved in the winter Reforger 85 exercises. The largest groups were from infantry, military police and combat support units.

Thirty-four ARNG nuclear-capable field artillery units were administered the qualification ARTEP during fiscal 1984 and successfully completed 80 percent of their tasks. The average score was 91.7 percent in fiscal 1984 versus 96.6 percent in fiscal 1983. In order to successfully complete a qualification ARTEP, such units must conduct a minimum of 80 percent of their delivery of fire tasks, while maintaining a 70 percent or better operational readiness in personnel and equipment. Each nuclear-capable unit must complete all nuclear-level tasks. During the 50 continuous hours of field operations required, a unit must conduct a minimum of five tactical moves of at least five kilometers each. Two of these moves must be conducted at night.

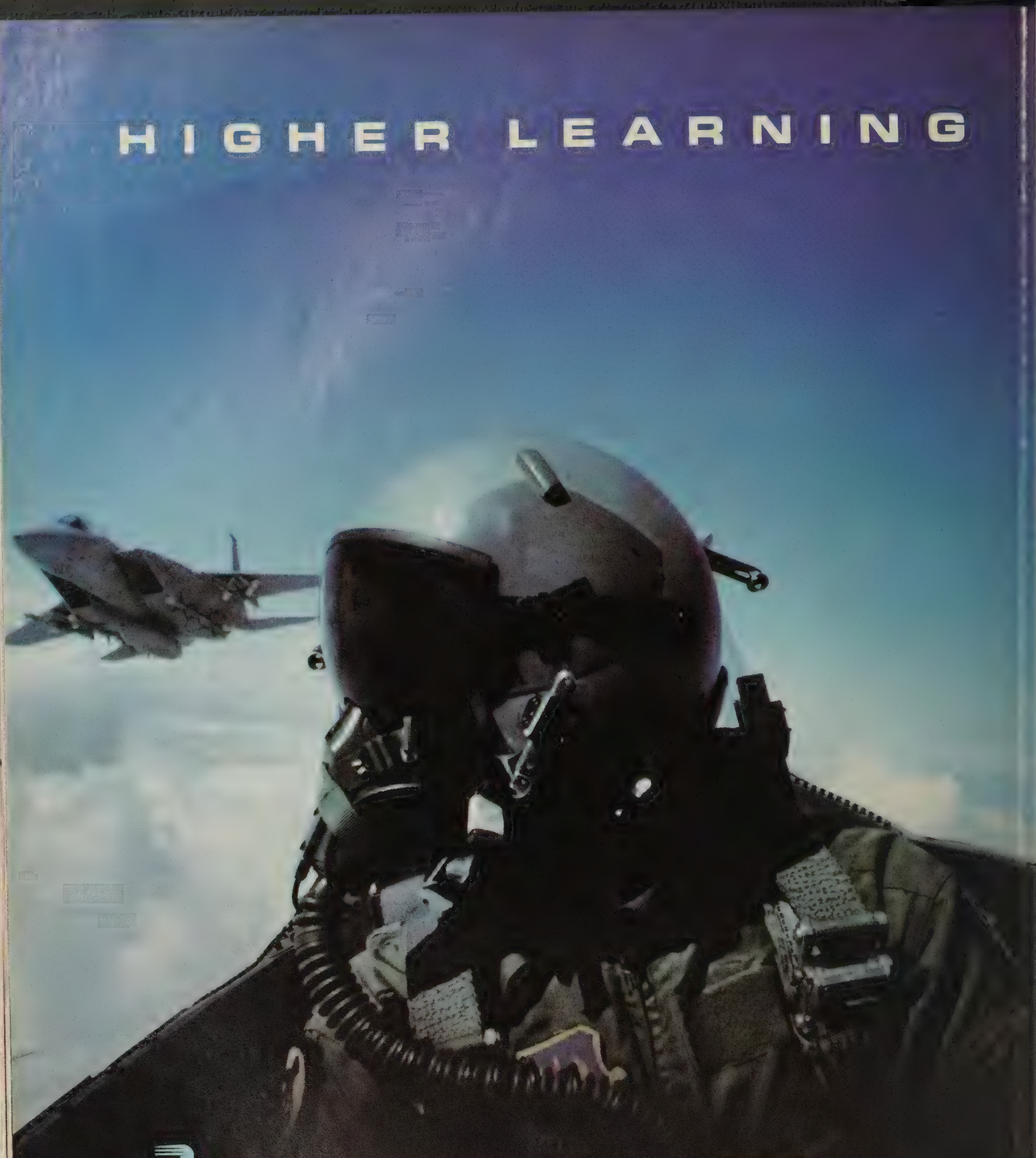
Approximately 30,000 will graduate from reserve components noncommissioned officer education system classes. The program is devoted primarily to leadership skills. Regional training centers have been started for the ARNG in five locations to teach primary NCO skills, and one advanced NCO school is being formed.

The ARNG battle skills course is available for NCOs in grades E5 through E9 to concentrate on all aspects of squad and platoon weapons, NBC (nuclear, biological, chemical) and other basic, small-unit fighting skills in a tactical setting. This two-week, "no-frills" course conducted at Camp Robinson, Ark., is getting high praise for its enhancement of NCO professionalism.

The reserve components tank commander's course is a concentrated two-week program of instruction. Under the auspices of the Armor School, this course will train nearly 800 tankers in fiscal 1985. Conducted at Gowen Field, it is highly regarded in the armor community.

Systems are under development for armor and artillery crews that will allow realistic indoor training to be conducted with state-of-the-art computer and video equipment. This will enhance local training and skill sustainment of our armor and artillery crews.

A prototype regional training center for the ARNG is being constructed at Ft. Dix, N.J. The center will help sustain soldier skills and develop the crew, squad and platoon proficiency required to operate and maintain the newest of the Army's weapon and maintenance systems. This simulator-related facility, centered in an area with a high concentration of



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RNG units, will also permit division-, gade- and battalion-level tactical train- employing the most modern simula- n devices.

Our ability to train and operate is di- tly related to supply and maintenance. ten overlooked, this vital part of our gram is benefiting from aggressive proaches to improving readiness in a cetime environment. Although we ve not received all the equipment we d and want, we have enough to con- t training and, in most instances, for nbat, although with reduced effective- s in many units.

We have never been better supplied in cetime. With this increase in equip- nt and resources comes the challenge proper management. The Army Na- nal Guard logistics story is exciting to se of us who clearly recall the "dog s" when training was severely inhib- l and battlefield sustainability a myth ause of the absence of modern equip- nt.

A new program, called "fixing readi- s within the Army National Guard," ws tremendous potential. Using infor- ion about existing and projected equip- nt assets, National Guard Bureau lo- ics experts have written a new com- er program that quickly shows how ipment should be redistributed be- en units or within a state to increase diness.

On one document, planners can now how to make the equipment shifts. report summarizes the following ns: documentation, substitute items, npted reportable line items, equipment ribution and redistribution require- nts, projected force-structure changes, sible equipment procurement action, on-going policy, programs and ini- ves to improve the readiness of equip- t on hand.

The program has been used in Georgia, o and Louisiana. The vice chief of of the Army and under secretary of Army have directed that the program ielded within the Army Reserve and ve forces. Ft. Stewart, Ga., was se- d as the first active component in- ation to be evaluated.

A "readiness enhancement team" has formed to review the equipment ns in selected major Army Guard bat units. A team was sent to Geor- Guard units in the 24th Infantry Di- n (Mechanized) in February, and ns will be visiting other units this . Logistics officers plan to create an rtable package, including the com-



North Carolina Army National Guard medics help each other don their camouflage paint in preparation for a training exercise.

puter program, that can be sent to each state for use in checking readiness in non-deployable units.

A pilot program was initiated in January to assist commanders at various levels in food service sanitation, subsistence accountability, food preparation and maintenance of food service organizational equipment.

Five states have food management assistance teams composed of extremely competent state food service personnel. Pennsylvania, Virginia, Georgia, Mississippi and Alabama are taking part in this test. Initial reports indicate that these teams are a valuable asset to those states involved.

The test will continue through December and may ultimately cause teams to be formed in every state and territory.

Beginning in the latter part of fiscal 1983, a five-year program was established in the ARNG to rustproof all tactical and commercial wheeled vehicles (if not already processed by the manufacturer or a depot) to prolong the life and use of over 90,000 vehicles. The program is being accomplished by in-house labor or local contracts. Currently, 39 percent of the vehicles have been completed at a cost of $5.5 million with approximately $5 million programmed for fiscal 1985.

Beginning in fiscal 1985, the ARNG established a program with Anniston Army Depot for the repair and return of tank fire control components. This program will provide a quicker response to the needs of the ARNG, and will result in improved tank readiness. This program is intended to provide support for the M48/M60-series tanks and not to circumvent the normal programs at depots and national inventory control points.

In August 1984, the ARNG formalized a memo of understanding with the Communications-Electronics and Depot Systems Command on a direct exchange/repair and return program for communications-electronics (CE) equipment. The program essentially provides a five-year depot overhaul program for CE equipment and will improve the readiness posture of the ARNG. It is not intended to circumvent the normal maintenance and supply systems but, rather, to enhance them under controlled conditions.

ARNG is in the process of receiving 50,000 new camouflaged chemical protective overgarments. An additional "Overgarment 84," a slightly modified battle-dress overgarment, is scheduled for issue in DAMPL sequence from the last quarter of fiscal 1985 through the second quarter of fiscal 1986. The long-range goal is for each individual in the Army Guard to have one training chemical protective overgarment and one battle-dress overgarment for contingency.

The fielding of the new Kevlar helmet

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The sight has exceeded performance specifications. It is now in production for the Army Helicopter Improvement Program.

Watch for it.



MCDONNELL DOUGLAS

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Construction equipment crosses Panama's Rio Negro where Army National Guard engineer units built a Bailey bridge during exercise 'Blazing Trails.'



t. Sandy Ussery of the Louisiana Ar- ' National Guard's 205th Engineer ttalion records survey data for a dge site during exercise 'Blazing ils' in Panama.

process with 3,700 received in fiscal and 12,217 scheduled for fiscal 1985. rcise "Blazing Trails" in Panama ot only an engineering training ex- it was a major logistics training ex- for ARNG combat service support units. A corps support command COM) and elements of 12 CSS units rted an in-country strength of ap- nately 7,800 soldiers—600 troops tation in two-week cycles.

The task force was logistically self-supporting with a logistics support element controlled by a COSCOM headquarters which also provided materiel management and movement control centers. Elements of a supply and service company provided subsistence and housekeeping supplies, fuel and construction materials and field services including baths, laundries and bakeries.

Elements of three transportation companies provided assets to move equipment, supplies and some personnel between Ft. Clayton and base camps. Maintenance for both surface equipment and aviation was provided by ARNG assets. Medical services were provided to all sites by elements of an evacuation hospital, dental detachments and an air ambulance unit.

Even though they are classified as combat support units, elements of a military police company provided base camp security and convoy cover. A portion of an engineer company operated the water purification equipment providing fresh water to both forward camps.

With an exercise of this scope, covering large distances between the support base and forward bases, operating in a harsh environment with an operating tempo closely resembling combat conditions, logistics problems were expected. Even though logistics problems did arise, the success of the overall mission was due primarily to the efforts of ARNG CSS units to provide what was needed, where it was needed and when it was needed.

More than $1 billion in new equipment was planned for distribution to the ARNG during fiscal 1985. New equipment includes M1 tanks, Bradley fighting vehicles, improved TOW vehicles, M198 howitzers, Chaparral air defense missile systems and AH-1S Cobra helicopters.

Through fiscal 1985, Congress has provided $350 million specifically for ARNG equipment procurement. The money has been spent on armored personnel carriers, M198 towed howitzers, improved TOW conversion kits, "Tri-Tac" (tri-service tactical) communications equipment, electronic shop shelters, five-ton cargo trucks and commercial utility cargo vehicles.

The Department of the Army has also been tasked by Congress to procure equipment for the ARNG from its procurement appropriation. The money has been used for AH-64 and UH-60 helicopters, C-12 aircraft, Chaparrals and improved TOW vehicles. It also upgraded the AH-1G helicopter to the AH-1S.

The "minimum essential equipment for training" (MEET) program will provide approximately $51.3 million in additional equipment by the end of fiscal 1986. This program is being expanded to include all reserve components units and additional equipment items. Once new equipment items are identified as MEET, plans for distribution will be finalized.

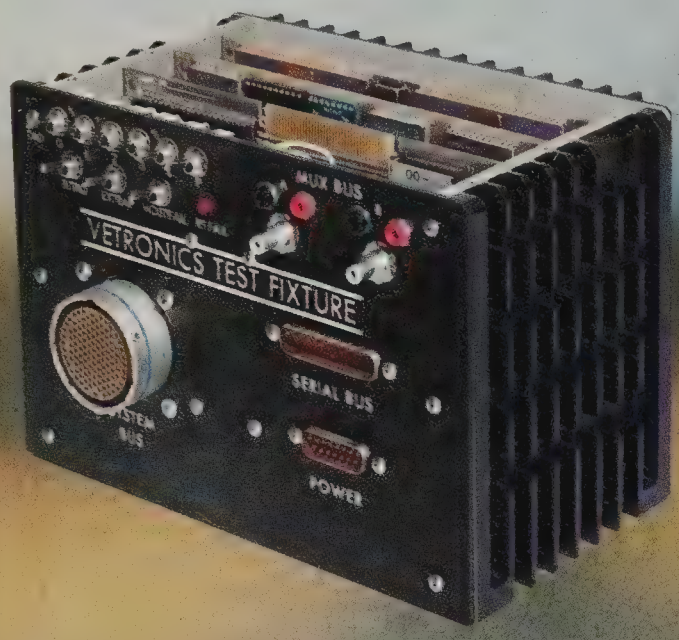
The shortfalls identified in reserve components signal units (primarily switches and transmission equipment) continue to receive additional Department of the Army support. An additional $140 million has been programmed for the fiscal 1987 through 1991 program objective memorandum to procure reserve components signal equipment shortfalls identified in the November 1984 battlefield communications review, for projected delivery in fiscal years 1986 through 1991.

The Army's "reserve components support unit capability enhancement management action plan" pulls together a variety of initiatives that support the training and equipping of reserve components combat service support units on current and force modernization systems. To date, over $270 million has been programmed for the period from fiscal 1985 to fiscal 1991 to support this action.

Two major programs within the action plan, regional maintenance training sites and "reserve components transition to modernization," focus on nondivisional maintenance units through specific train-

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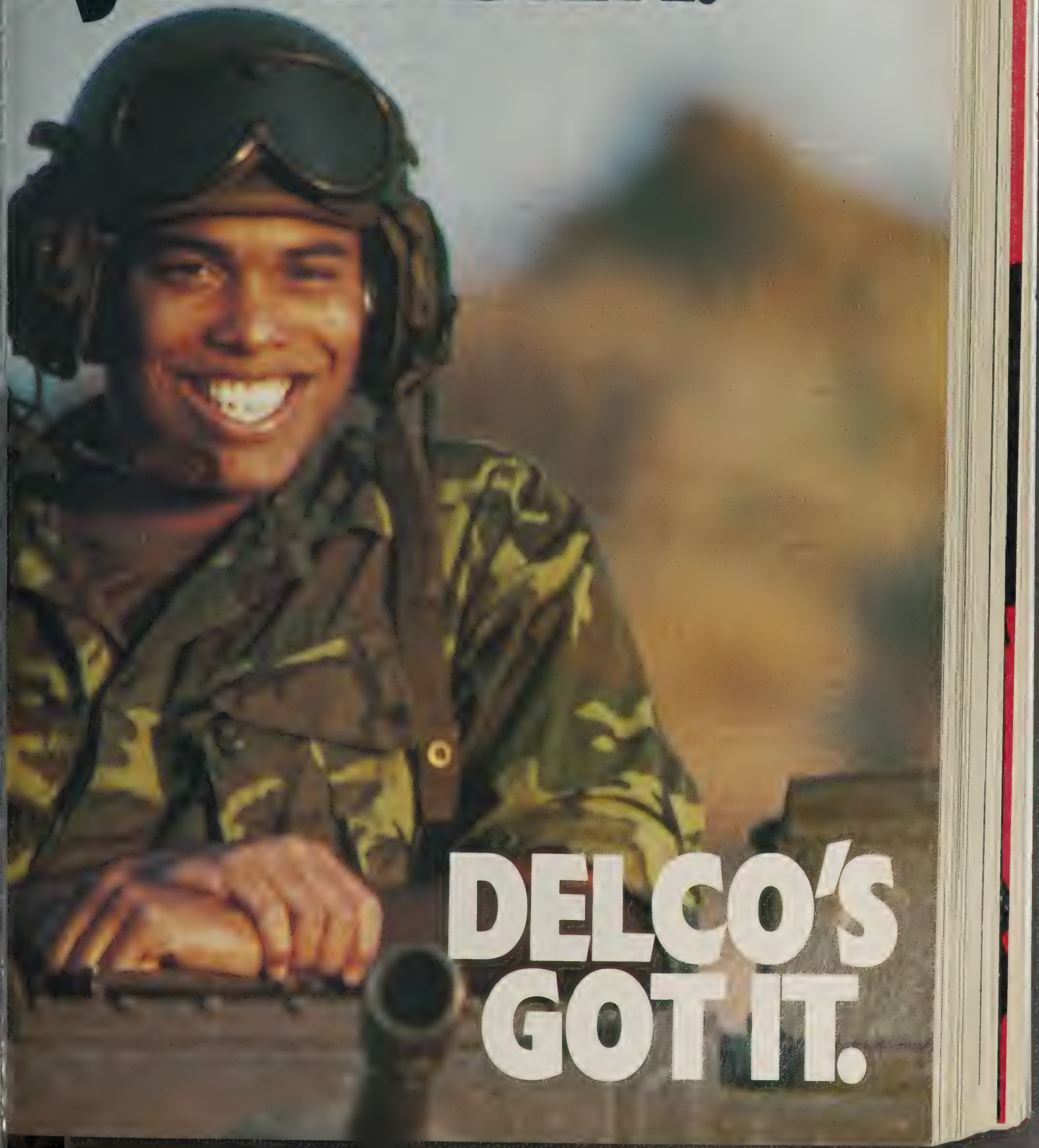
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ing and equipping objectives.

Twenty-three regional maintenance training sites will be established and equipped to provide skill transition and sustainment training of unit personnel on the Army's newest weapons and maintenance systems. "Reserve components transition to modernization" provides mission-essential special equipment not authorized to selected early-deploying units but critical to their wartime missions.

With more than 30 percent of the Total Army's combat aviation force in the Army National Guard, our aviators face many challenges.

They must meet the same minimum annual flying requirements and standards as active Army pilots. They also must work to meet individual and crew requirements identified by the aircrew training program and train as an element of the combined arms team.

The Army Guard has started implementation of the "Army of Excellence" design for aviation units. These changes involve redesign of all division elements and the addition of many new corps-type units. The main restructuring will occur in fiscal 1986 and 1987, with a limited number in fiscal 1988 and completion the following year.

The Army Guard aviation training site (AATS) program has been developed to support our increased training workload and allow units to concentrate on unit and combined arms training. The Eastern AATS, the first of two, became fully operational at Ft. Indiantown Gap, Pa., during fiscal 1983. Its mission is to conduct individual aviation qualification training not provided by the Army Aviation Center, but essential to the readiness of units. Approximately 600 aviators train there yearly.

The Western AATS is scheduled to begin operations during fiscal 1987 at Marana, Ariz. Its mission will be to supplement tactical training with emphasis on aerial gunnery and attack team training. Both sites will operate an AH-1 flight/weapons simulator beginning in fiscal 1988.

The Army Guard has started the action necessary to field its first unit with the AH-64 Apache aircraft. The fielding will be by unit and will include the total package of logistics, training and operational items. Along with the AH-64, units will receive OH-58Ds as an accompanying aero scout aircraft.

Currently, Kentucky and Ohio units have the UH-60A Black Hawk helicopter, with a total of 89 scheduled for assignment to the Army Guard by the end of fiscal 1991.

The Army Guard has an "Army of Excellence" requirement for 624 attack aircraft. There are 144 AH-1s on hand, with 75 new aircraft projected by the end of fiscal 1986. Some are factory fresh, while others are displaced from the active forces as a result of modernization. Eventually, all will be upgraded to the AH-1S standards.

We operate the Army's total authorization of 70 CH-54 heavy-lift helicopters. As funding allows, these workhorses will receive depot overhaul and are scheduled to stay in the system through the year 20

The Army Guard is also the prima user of the OH-6A helicopter. To ke these aircraft available for unit use, t manufacturer and Aviation Support Co mand have identified and validated m than 550 line-item spare parts that can quickly purchased from local commerc vendors.

Modernization of the Army Guar fixed-wing fleet continues. The ARN has a requirement for 85 fixed-wing a craft. To date, 12 C-12 and 14 U-21 a craft are on hand. The shortage is fil with the U-8, T-42 and U-3 aircraft

There has been a rapid increase in a ator strength, from 4,513 in fiscal 19 to 4,949 in mid-fiscal 1985. Projec aviator strength at the end of fiscal 19 is 5,194. To buck the trend of the Ar Guard's "aging aviator," an age limit 27.5 years has been set for applicants the undergraduate flight training progra This management tactic will help stea the 20-year life cycle of our pilots.

To date, more than 1,400 Guard av tors have received night-vision gog training. We are in the third year of eight-year program to train all of pilots so tactical aviation units will h 24-hour tactical mission capability.

Our safety program works to prev motor vehicle, aircraft and personal jury accidents. The motor vehicle a dent rate for fiscal 1984 was 1.93 a dents per million miles driven, dc from 2.17 in fiscal 1983. The fiscal 1 overall accident rate was 1.69 accid per 200,000 hours of exposure. This



A forklift truck of the 235th General Supply Company, South Dakota Army National Guard, unloads cargo from a flatbed trailer during winter training in Alaska.



Pvt. John Majikes of the Pennsylvania Army National Guard's 2nd Battalion, 109th Infantry, takes the point for his fire team during winter maneuvers at Ft. Indiantown Gap, Pa.



Antitank team from California's 40th Infantry Division (Mechanized) prepares to fire a TOW missile on the training range.



The only units in the Army force structure with a primary specialty of mountain warfare are in the National Guard of New York and the New England states: Vermont Guardsmen practice mountaineering skills during training at Camp Ethan Allen, Vt.

down from 1.98 in fiscal 1983. The Army Guard aviation mishap rate in fiscal 1984 was 2.57 accidents per 100,000 flying hours, up from the 2.0 rate in fiscal 1983 due, in part, to an increased risk of exposure during tactical flying scenarios.

The Army National Guard operates a variety of real property facilities designed to meet the training, logistical, management and maintenance needs of the Guard. Management of these diverse functions and facilities is essentially accomplished by host states.

Given new demands placed on the Guard and its burgeoning equipment inventory, the need to re-evaluate the design and utility of our facilities was obvious. It has sparked the National Guard Bureau to study entirely new concepts to meet all needs. Our thrust has been to design our construction program to support the solid training of our soldiers.

Our 5,086 facilities include armories, aviation facilities, surface equipment maintenance shops, training sites and U.S. Property and Fiscal Office administration and warehouse complexes.

Categories of real estate include: federally owned and licensed to the state; state-owned; and privately owned and leased to the state or federal government.

The fiscal 1984 military construction budget for the Army Guard was $67.6 million. It provided for 26 new or replacement armories, 6 armory upgrades/expansions and the building of 20 other facilities and training site projects.

The fiscal 1985 military construction budget for the Army Guard was $98.6 million. It provided for 49 major construction projects including: 21 new or replacement armories, 3 armory upgrades/expansions, the building of 24 other facilities and training site projects and 1 land acquisition project.

Operation and maintenance costs are paid in the following manner: armories—100-percent state funds; other facilities—75-percent federal/25-percent state; and training sites—100-percent federal. The fiscal 1984 operation and maintenance program was $96 million. The figure for fiscal 1985 is $129 million. The backlog of maintenance and repair was held to no growth for the first time in fiscal 1984.

Increases in Army Guard force structure and replacement for World War II-vintage buildings will require significant new construction in the future. Construction money for 67 projects has been requested for fiscal 1986. Major work will



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Road graders of the 205th Engineer Battalion, Louisiana Army National Guard, at work in a remote section of southwestern Panama during exercise 'Blazing Trails.'

ude: 22 new or replacement armories, rmory upgrades/expansions, building 37 other facilities and training site jects and 1 land acquisition project. he primary purpose of the Army Na- al Guard is to be prepared to meet onal security missions. State and local rgency functions benefit from the rd's readiness to meet its combat s. Readiness and mobilization are the to the Guard and its role. Progress been significant in both areas.

ince 1982, through the first quarter of 1985, Army National Guard units have increased by eight per- in personnel, six percent in military upational specialty qualification, six ent in training and three percent in pment on hand. The downward trend quipment-on-hand readiness during period, caused by modernization and structure changes, has reversed since ary. The equipment-on-hand readi- posture has improved by nine per- since that time. This significant gain ue, in part, to the Army Guard pol- o manage the impact of force mod- ation on readiness implemented in uary.

study called "measuring improved bility of Army forces" (MICAF) has n a substantial increase in the com- apability of Army National Guard ions. Capability increased 20 percent 1980 to 1984 directly through the l receipt of modernized equipment. next study cycle of MICAF will ad- the Guard's separate brigades. Com- le results are expected.

rough the Capstone program, Army d units maintain a clear alignment war plan requirements of our com- lers in chief. War-planning associa- are established for our Army Guard with active Army commands. Army d units base training and focus plan- on their assigned priority mission. otential Army Guard contribution Total Army effort has never been parent.



A bulky rubber bridge float occupies these Wisconsin Guardsmen of Company D, 724th Engineer Battalion, during exercises at Camp Ripley, Minn.

To better prepare for mobilization, the Army Guard has conducted more than 550 mobilization exercises in 1985, involving over 1,200 units. Some of these were "no-notice" exercises. These exercises take the unit from the peacetime environment through alert and mobilization at home station to arrival at the mobilization station.

Today, mobilization planners are working throughout the active Army and the Army National Guard developing plans and operating procedures to enhance and accelerate the mobilization process. A new mobilization planners course is being conducted at Ft. Sam Houston, Tex., to teach the skills and techniques of this complex and demanding function. All of these actions are better preparing the National Guard to protect America.

The Army National Guard of 1985 is different from the Guard of the past. Training demands and the responsible role the Guard plays in national security place a significant burden on its soldiers and their families.

They, the soldiers, are meeting the challenge, often through extreme personal sacrifice. Our nation is benefiting from our Guardsmen's contributions. The economies derived from a truly effective Army National Guard are felt across a wide spectrum of our society.

Guard leadership has always stated, "Give us the resources and we will do the job." The resources are there and more are coming. All Americans will be well served by the results.

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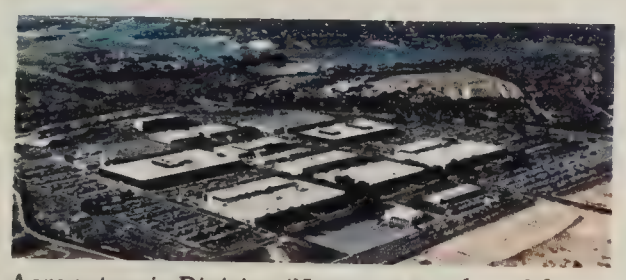
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Mopping-up operations had barely begun on the tiny island of Grenada when Army Reserve Civil Affairs experts from the 358th Civil Affairs Brigade, the 304th Civil Affairs Group and the 416th Civil Affairs Company, Army Reserve units in Pennsylvania, arrived to help the newly appointed government begin the long process of repairing the torn fabric of the island's society.

Long after operation "Urgent Fury" ended, Army Reservists continued to lend their talents to a people desperately in need of help in restoring the basics of day-to-day living that had been neglected under the communist government. The Reservists remained, in fact, several months after the last security forces departed.

One project undertaken by Army Reservists was the revitalization of the practically nonexistent school system. School buildings were run-down, teachers were in short supply and textbooks were not to be had.

The previous government had destroyed nearly all books which did not espouse the communist ideology. As democracy was restored, the communist propaganda was removed, but there was nothing to replace it.

The need for textbooks, reported in a a national news magazine, was noted by Larry Ochalek, a Michigan school executive and a major in the Army Reserve. Maj. Ochalek contacted several school districts to solicit donations of excess textbooks. His efforts quickly produced some 20,000 pounds of books.

The books were delivered by Army Reserve trucks to a Project Hope warehouse in Herndon, Va., and were transported by rail to Miami and then by ship to Grenada. Members of the 360th Civil Affairs Brigade of Columbia, S.C., were on hand to open the containers and present the books to the island's minister of education. The efforts of these Army Reservists have already resulted in a major restoration of the island's educational system and are indicative of the increased role played by the Army Reserve in the Total Army mission.

The contributions of Army Reserve members in operation Urgent Fury and its aftermath demonstrate the many unique capabilities found throughout the A-m Reserve, as well as its ability to respor rapidly and decisively whenever and whe ever needed.

The mission of the Army Reserv directed by Congress is "to provide train units and qualified persons available f active duty in the armed forces, in tir of war or national emergency and at su other times as the national security r quires. . . ."

The Army Reserve includes approx mately 261,030 individuals in comba combat support, combat service suppo and general-support units training to pe form wartime missions. The units a located not only throughout the Unit States including Alaska and Hawaii, b in Europe, Guam, American Samoa a Saipan.

The Army Reserve also includes mo than 285,000 pretrained individuals the Individual Ready Reserve (IRR). The personnel will provide replacements, fill and cadre for new units in the event mobilization.

Troop program units (TPUs) in t continental United States are under t

Grenada Rebuilding Is a Case Study

Reserve Readiness Shows

By Maj. Gen. William R. Berkman
Chief, Army Reserve



mand of the Army Forces Command RSCOM) at Ft. McPherson, Ga. The is managed by the Army Reserve onnel Center (ARPERCEN) in St. is, Mo., a field operating agency of chief, Army Reserve. The individual ilization augmentee (IMA) and Army rve active Guard/Reserve (AGR) pro- ns are also managed by ARPERCEN. addition to his statutory role as ad- r to the chief of staff of the Army on y Reserve matters, the chief, Army rve, also serves, by regulation and ctive, as a member of the Army staff director of Army Reserve appropria- s.

s shown in the table, entitled "Army rve Contributions to the Total Army e Structure," the Army Reserve con- a significant percentage of the Total y force structure.

nce 1980, there has been a steady in- e in the Army Reserve's ability to its wartime requirements. This im- ement has been supported by con- ional concern with the structuring, rnizing, equipping and training of Army Reserve. With the continuing support of currently programmed expenditures, Army Reserve readiness will continue to improve.

Based on current plans, in the first 50 days after mobilization, the Army Reserve will provide the major portion of the Army's combat support and combat service support units. With evolving force structure initiatives and increasing congressional emphasis upon greater reliance on the reserve components, the significance of the Army Reserve's Total Army contributions will continue to grow.

Fundamental to an army of citizen-soldiers is the quality and motivation of the people who serve in it. Every president since George Washington has recognized the importance of the role of the citizen-soldier in our republic. President Ronald Reagan has declared that "Army Reservists, like the citizen-soldier of earlier time, stand ready to respond to their country's call and their nation's need."

Army Reserve TPU paid end strength for fiscal 1984 was 261,030, including both drilling Army Reserve members and full-time manning personnel. This represents an increase of more than 57,000 TPU members over the total reported in fiscal 1980.

Army Reserve numerical recruiting objectives have been met for the past six years. Increasing difficulty is expected, however, in meeting recruiting objectives for enlistees without previous service, as a result of a declining population of young Americans available for service.

For this reason, recruiting resources were increased by 578 full-time personnel in fiscal 1985. This increase is coupled with Army Reserve retention programs intended to reduce unprogrammed losses below the level for fiscal 1984. These initiatives should result in the achievement of the Army Reserve's TPU fiscal 1985 end strength objectives.

While increasing the strength of its recruiting force, the Army Reserve has increased its enlistment standards. Current standards for enlistment without prior military service are identical to those of the active Army. In fiscal 1984, enlistment for personnel classified as high school graduates exceeded 80 percent, about one-third higher than three years ago. During that same period, enlistment of applicants with low enlistment aptitude test

teady Rise

Total Army partner contains many of the support units and individual skills that the Army would need to mobilize and function in war, so ability to meet wartime requirements is the first objective of those who manage and serve in this vital component.



An Army Reserve chemical unit lays down a smoke screen during participation in a training exercise.

scores fell to below 12 percent.

Incentive programs have been successful in attracting and retaining highly qualified applicants. In fiscal 1984, more than 17,000 personnel enlisted or reenlisted in units for a cash bonus or educational assistance. These high-quality personnel accept a three- to six-year unit obligation, fill high-priority units or possess critically needed military skills and demonstrate a high probability for retention and reenlistment.

A major initiative designed to assist members of units of the Army Reserve to meet their readiness requirements is the programmed increase in full-time unit support personnel who assist units in training, planning, maintenance, supply and administrative functions. Full-time support personnel at the unit level include active component, active Guard/Reserve personnel, military technicians who are civilian support personnel and also Army Reserve unit members.

With congressional support, the number of full-time unit support members available to the Army Reserve has increased steadily over the past several years. As the Army Reserve continues its rapid conversion to the latest high-technology equipment, the number of full-time manning personnel is programmed to increase, at least through 1991.

The Army Reserve has consistently sought to achieve fair representation of women and minorities throughout the structure of all Army Reserve programs. The overall objective is to provide all soldiers with the maximum opportunity to succeed.

Over the past five years, female personnel strength in the Army Reserve has increased by 80 percent. At the end of 1984, there were 42,000 women in troop program unit assignments.

In fiscal 1984, the racial/ethnic composition of the reserve components was generally comparable to that of the active force. The Army Reserve is keenly aware of the vital role minorities play in Reserve readiness. We emphasize the importance of the equal opportunity programs throughout the Army Reserve.

The secretary of the Army and the Army chief of staff proclaimed 1984 as the "year of the Army family." As part of that emphasis, a task force was established to identify and resolve issues that impede the full participation of Reserve families with the Total Army. The task force is carefully reviewing laws, directives, regulations and policies to identify problems and recommend solutions to issues that limit Reserve families' full participation in Army programs.

A major family initiative is the reserve components commissary test. When fully implemented, this program will allow Reservists and their families to use the 14 days presently authorized for commissary shopping at any time during the year rather than only during the annual training period.

Other incentives being considered include identification cards for family members which will be issued for identification purposes only, orientations for Army Reserve family members and the extension of certain Army welfare and morale services to reserve components members and their families.

There continues to be a significant requirement for additional skilled medical personnel for the active and reserve forces. A number of successful programs have been initiated.

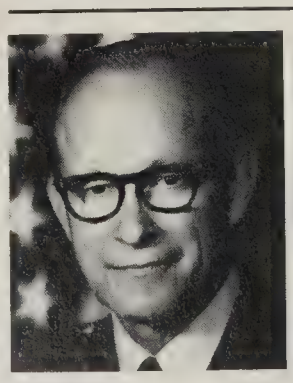
One of the most successful is the Army medical, osteopathic, dental and veterinary student program. Intended to attract potential physicians, dentists and veterinarians while they are still in their professional schools, this program was initiated in 1981 with 20 students. The program has since grown to approximately 400 students, with 100 students graduating annually.

Selected students are commissioned officers in the Medical Service Corps until their graduation. Those selected for commissioning in the Medical, Dental or Veterinary Corps incur an eight-year service obligation in the Ready Reserve.

Additional initiatives have been implemented to increase the numbers of medical personnel with the most critical needed skills. These initiatives include training programs for operating room nurses, funded attendance at health ed



The 180th Transportation Company, Grand Rapids, Mich., trained in West Germany during the 1983 'Reforger' exercise; here, the unit's Pfc. Karen Christiansen performs maintenance on a tractor during the field exercises. The 180th is part of the 425th Transportation Brigade, headquartered at Ft. Sheridan, Ill.



MAJ. GEN. WILLIAM R. BERKMAN, chief of the Army Reserve since July 1979, was commissioned a second lieutenant in the Reserve from ROTC at the University of California, Berkeley, in June 1950. His active-duty service from 1952–54 included a tour in Korea in 1953 as an advisor to the ROK Army with the Korean Military Advisory Group. From 1955–56, after reverting to the Army Reserve, Gen. Berkman served as a company legal officer, later as assistant public law officer for the 351st Civil Affairs Area (A) from 1965–68, and as a public law officer from 1968–74. In August 1974, he became deputy commander of the 351st Civil Affairs Command, Mountain View, Calif.; the following year he became commander, a post he retained until he returned to active duty as chief, Army Reserve.

ion sessions and the establishment of dical and nurse detachment programs, ich allow an unprecedented degree of ning flexibility for Reserve medical sonnel. These various programs have ılted in an increase of nearly 2,000 sicians and some 580 nurses between al 1983 and 1984.

he Army Reserve has developed a plan ncrease its aviation contribution to the al Army by modernization and reor- ization. This plan proposes to mod- ze the Army Reserve aviation struc- through the addition of five aviation up headquarters, which will include combat aviation battalions, one gen- support aviation battalion and four he 14 corps attack helicopter battal- designated for the Army's reserve ponents. These battalions will be or- zed as part of an improved functional mand and control structure which enhance training, combat readiness, pstone" affiliation with active com- ds and aviation safety.

Recognizing the critical importance of training to overall readiness and to improved retention, the Army Reserve has initiated a number of programs to take the best advantage of available training hours.

In several fields, it is recognized that skills cannot be retained in the number of paid drill assemblies currently authorized. Therefore, a number of additional drill assemblies have been authorized for Reserve troop program units. These include flight training assemblies, airborne unit training assemblies and assemblies for nuclear training. Most of these programs have remained stable for the past several years, with growth being programmed commensurate with future Army Reserve mission expansion.

Army Reserve units are also receiving the latest training simulators specifically to improve readiness. The procurement of the multiple integrated laser engagement system (MILES) resulted in 30 major reserve components training sites being equipped with this training aid. Also in fiscal 1985, the Army procured tank gunnery video devices for each Army Reserve tank company and armor-oriented training division.

Further initiatives include a prior-service training program to provide retraining of prior-service personnel whose skills do not match those needed for the positions they fill in their units, additional medical/dental training for Reservists and initiatives to require more Reservists' participation in active-duty schooling.

The overseas deployment training program ensures realistic periodic training in areas where Army Reserve units may have to deploy as a result of contingency operation plans. It is projected that high-priority Army Reserve units will train overseas once every three years. Other units that would deploy within the first 60 days after mobilization are programmed for overseas training once every five years.

Reserve components participation in overseas deployment training has increased from 26 units in fiscal 1976 to more than 649 units or unit cells this year. Reservists have experienced the hot winds of the Middle East, the humidity of Central America and the frozen breath of the Arctic.

Army Reserve units have participated in readiness exercises in all parts of the world, from the "Reforger" exercise in Europe to exercise "Team Spirit" in South Korea.





Above, members of the Army Reserve's 421st Quartermaster Company (Airdrop), Fort Valley, Ga., don parachutes for a training jump at Ft. Benning, Ga.

Members of the Army Reserve's 180th Transportation Company, Grand Rapids, Mich., were able to see the town of Münster, West Germany, during a break in NATO field maneuvers following the 1983 'Reforger' exercise.

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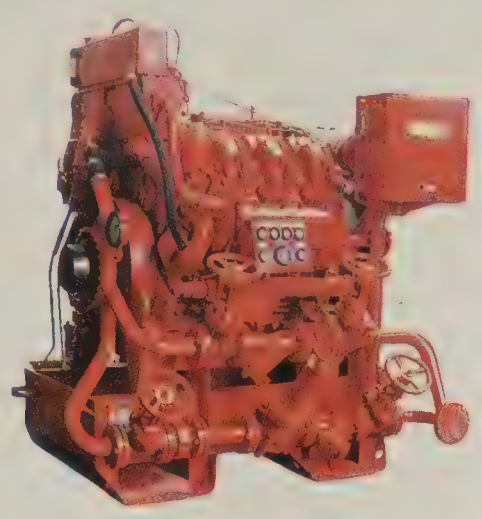


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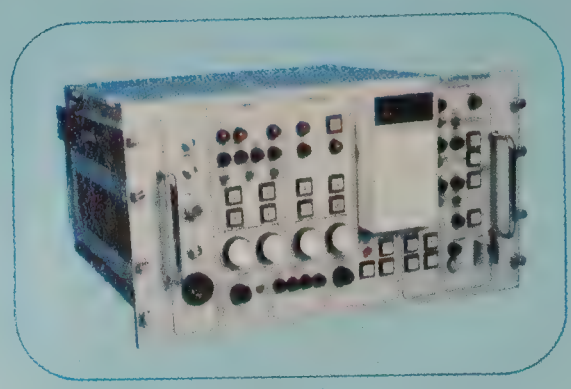
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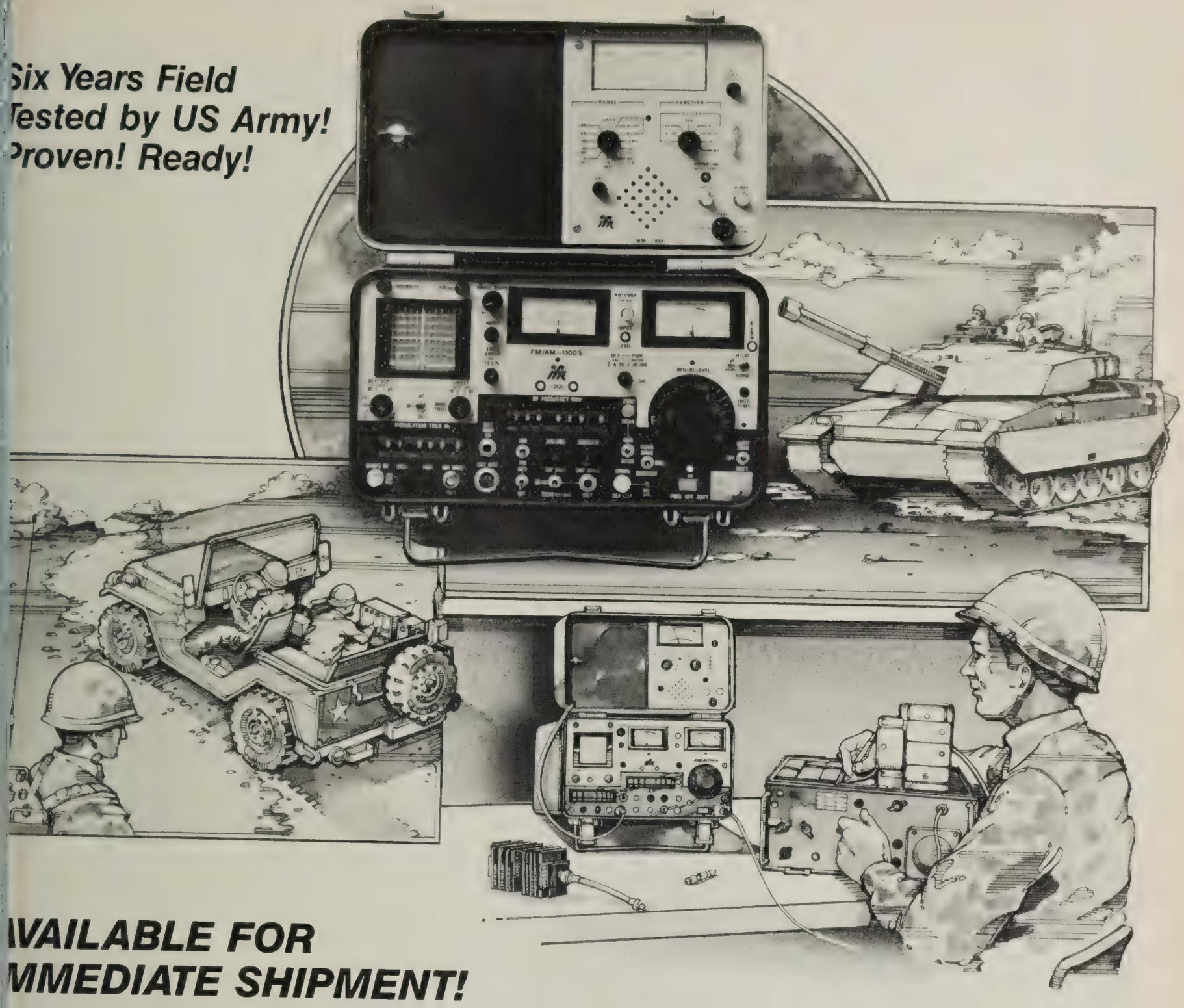
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The kinds of units participating in this training have included military police, supply and service, maintenance, well drilling, Judge Advocate General, Special Forces, engineer, medical, transportation, automatic data processing, military intelligence, civil affairs, psychological operations, ammunition supply, theater army area and corps support command headquarters, and chemical decontamination elements. In addition, individual Reservists have participated in that training in a wide variety of skills.

A number of individual Reservists with specialized skills are currently augmenting the staff of the U.S. Southern Command (SOUTHCOM) on a continuing basis. Additional Army Reserve units and individuals are currently programmed for training tours in SOUTHCOM, including medical and civil affairs specialists. Continued specialized assistance will be furnished to the government of Grenada by Army Reservists as needed.

The Army Reserve continues to administer the Army physical readiness test to eligible members during annual training and to eligible IMA and IRR members when they perform their annual or mobilization training. Physical screening for Reservists age 40 and over was initiated for the Army Reserve during required quadrennial physical examinations in fiscal 1984. Under this program, all soldiers age 40 and over are required to undergo cardiovascular screening before taking the Army physical readiness test.

In July 1984, the Army decided to expand the 40-and-over cardiovascular screening program to include reserve components soldiers. To comply with this decision, a pilot program was initiated in Virginia. All other reserve components personnel who have not yet received their 40-and-over cardiovascular screening will receive it as part of their routine quadrennial physical examinations. Only those soldiers who have passed phase I of the cardiovascular screening will be permitted to take the physical readiness test.

The Army Reserve is a part of the Total Army's equipment requirements. The support of Congress in the past two years has made it possible to come closer than ever before to the objective of equipping for combat readiness.

Equipment shortages, the most serious limiting factor affecting readiness in the Army Reserve, are a long-standing problem which will not be easily solved. Based on equipment on hand in Army Reserve units, wartime equipment requirements are presently at about 50 percent fill, and peacetime fill authorizations are at approximately 60 percent. These figures, which have improved only slightly over the past four years, are consistent with the percentages of Army Reserve units rated combat ready (C3 or better).

Nevertheless, significant progress has been made in obtaining substantial quantities of more modern equipment for the Army Reserve. Since 1981, the Army Reserve has received more than $339 million in dedicated procurement funding as a result of congressional and Defense Department initiatives.

The general guideline for distributing equipment within the Total Army continues to be "first to fight, first equipped." Under this precept, Army Reserve units are interspersed in the equipment distri-

Army Reserve Contributions to the Total Army Force Structure
(Fiscal 1985)

Type of Unit	Percent of Army Structure*
Training divisions	100
Training brigades	100
Military intelligence (strategic research and analysis)	100
Civil preparedness support detachments	100
Army Reserve schools	100
Maneuver area commands	100
Maneuver training commands	100
Railway units	100
Judge Advocate General detachments	98
Civil affairs units	97
Psychological operations units	89
Smoke generator companies	78
Quartermaster petroleum, oil and lubricant supply companies	67
Army hospitals	65
Terminal service/transfer companies	61
Supply and service units	59
Pathfinder units	55
Conventional ammunition companies	51
Chemical decontamination companies/detachments	46
Quartermaster petroleum, oil and lubricant operating companies	45
Watercraft units	44
Army medical units (other) †	41
Combat support aviation companies	38
Quartermaster engineer water supply, well drilling, purification units	36
Major logistical units ‡	31
Truck companies	30
Nondivisional bridge companies	29
Combat engineer battalions	24
Maintenance companies (direct support, general support, nondivisional)	24
Special Forces groups	22
Separate combat brigades	13
Field artillery brigades, headquarters detachments	9
Field artillery battalions †	8
Mechanized infantry battalions †	2
Armor battalions †	2

* current structure as of January 1985
† includes organic and separate elements
‡ theater army area command/corps support command



on queue among active Army and y National Guard units, according eir planned deployment dates. The t of this policy is that early-deploy- units are relatively well equipped, e shortages are concentrated in later- oying units.

e minimum essential equipment for ng (MEET) program was initiated y 1983 to remedy equipment short- that impair unit training in reserve onents units. The program's initial asis is on late-deploying or nonde- ng units such as training divisions, e equipment shortages are particu- severe.

· the Army Reserve, the objective is l shortages of more than 300 items cified units by the end of fiscal 1986. October 1984, more than 120 MEET were made to designated Army ve units from depot maintenance ams and redistribution, as well as new procurement. MEET items in- trucks, trailers, tracked vehicles, vision devices and communications ment.

e Army is institutionalizing and ex- g the MEET program to all its com- ts by developing MEET require- for each type of unit. This pro- coupled with the existing distribu- ystem, will go far towards reducing ic equipment shortages that impair raining.

v facility construction, authorized st congressional action, gives the Reserve a sound network of pro- ally adequate facilities. Those fa- help the Army Reserve to attract s, retain and train them to a high state of readiness and maintain equipment economically.

During fiscal 1984, the Army Reserve enjoyed another successful year in upgrading and replacing its facilities. The key to this success was developing an executable program before submitting it to Congress for funding.

Design of major construction projects is being accelerated to have projects 100 percent designed and ready for contract when the program is approved by Congress. As a result of timely execution of fiscal 1984 and prior-year programs, plus a favorable construction market and congressional approval of our reprogramming requests, six additional projects were executed. In fiscal 1985, construction of six new replacement Army Reserve centers and two multipurpose field training ranges began. Additionally, work began on the modernization and expansion of 24 existing centers.

Early in 1984, the Army undertook a significant step toward efficient Army Reserve personnel management with the activation of the Army Reserve Personnel Center. ARPERCEN evolved as one of several initiatives to enhance the role of the chief, Army Reserve, and improve Army Reserve personnel management.



Sp.4 Liz Johnson of the Army Reserve's 180th Transportation Company, Grand Rapids, Mich., greases the roller bearings of a heavy truck during the 1983 'Reforger' exercise in West Germany.



An Army Reserve infantryman sights a rifle fitted with a MILES (multiple integrated laser engagement system) device; many Army Reserve units are now equipped with the system, which permits realistic force-on-force training for small units.



A member of the Army Reserve's 421st Quartermaster Company (Airdrop), Fort Valley, Ga., assembles a newly issued chemical protective mask.

In their joint statement before committees and subcommittees of the U.S. Senate and the House of Representatives in 1984, the secretary of the Army and the Army chief of staff said that ARPERCEN "will enhance the executive role of the chief, Army Reserve, by giving him responsibility for the management of the Individual Ready Reserve, individual mobilization augmentees and Army Reserve active Guard/Reserve personnel."

In response, Congress expressed approval of ARPERCEN by stating:

> The executive role of the chief of the Army Reserve will be enhanced by his new responsibilities for the management of the individual personnel assets of the U.S. Army Reserve. The new executive authority is a welcome, but long overdue, addition to the advisory responsibilities of the chief. . . . The Committee will carefully monitor the implementation of these specific proposals and the other features of the Army plans.

ARPERCEN's motto, "management for mobilization," is indicative of its continuing success in upgrading the management of its programs. One such effort is the Office of the Chief, Army Reserve's (OCAR's) initiative to develop a comprehensive IRR training management plan where ARPERCEN plays a pivotal role. Efforts are under way with the Army deputy chiefs of staff for operations and plans and personnel, the Training and Doctrine Command, FORSCOM and the chief, Army Reserve, to develop training strategies required to provide the IRR with specific training to meet critical wartime tasks.

During fiscal 1984–1985, the Army reorganized some of its command and control structure for the Army Reserve. This reorganization included the elimination of nine Army readiness and mobilization region headquarters and the activation of two additional numbered continental Army headquarters.

Fiscal year 1985 also witnessed progress toward the organization of the 125th Army Reserve Command (ARCOM). The new headquarters will exercise command and control of units in Tennessee and Arkansas previously commanded by the 121st ARCOM.

Personnel actions in fiscal 1985 focused on filling high-priority positions and recruiting quality soldiers. Special attention was given to critical, high-technology skill areas. An increase of more than 41,000 Reserve unit members is projected by 1990.

To help meet this goal, the education benefits program, known as the new GI Bill, began in July. This legislation was achieved in large part through the efforts of Rep. G. V. ("Sonny") Montgomery (D–Miss.). He represents another example of the support by Congress of the reserve components of the Total Army. The bill provides members of the Army Reserve with up to $140 a month for as many as 36 months of full-time college or college-equivalent study. In return, the Reservist must agree to serve six years in the selected reserve force. The education benefits program was expected to attract about 2,300 participants in the last quarter of fiscal 1985 and nearly 18,000 in fiscal 1986.



Army Reserve civil affairs specialists helped distribute school textbooks in Grenada, one among many tasks they undertook to help rebuild the island after the fighting there in October and November of 1983.

Studies indicate that the pool of eligible non-prior-service men and women will continue to shrink until about 1990, after which there will be an upward trend. This indicates a clear need to maintain our current high level of recruiting and retention programs.

By fiscal 1989, approximately 14 percent of our Army Reserve troop program unit strength will be full-time personnel assisting drilling Reservists. We are currently refining full-time support data models that will assist us in effectively managing the growth of this program and assigning full-time support where it will have the greatest impact in helping drilling Reservists meet mobilization readiness goals.

Intensified personnel management of the IRR will be required to retain and improve the growing body of pretrained individual personnel. An integral part of IRR personnel management is training management. A comprehensive IRR trai ing strategy program is under develo ment to improve the mobilization reac ness of soldiers in selected military occ pational specialties. The strategy ma range from training in selected critic skills to refresher training in basic ski for greater numbers of IRR soldiers.

The recently increased military servi obligation will provide significant grow in the IRR beginning in fiscal 1990. Pr jections also indicate that the reenlistme bonus could attract an additional 43,0 reenlistees by fiscal 1990. Increased ma agement of the IRR will provide the R serve with qualified soldiers, as membe of troop units and the IMA programs peacetime and as mobilization assets time of war.

Fielding of four new attack helicop battalions will make the Army Reserve greater contributor than ever to the To Army. Programmed increases will a 23 units, nearly 200 aircraft and mo than 1,800 personnel (including 480 AC personnel) to the Army Reserve aviati structure.

The Army Reserve continues to mo ernize its equipment to be an effecti element in the Total Army. The fis 1986 program allows for an aggress program of maintaining old equipme training Reservists to maintain as well operate their equipment and acquir stocks of new combat and combat su port items.

In fiscal 1987 and beyond, the Ar Reserve will continue to carry out a p gram of equipment fill and moderni tion augmented by special programs su as MEET and receipts from previou funded dedicated procurement progra By 1990, the Army Reserve is schedu to receive, from all sources, equipm valued at more than $2 billion.

Today, our nation faces challenges t run the gamut from terrorism and lo intensity conflicts to potential strate confrontation between East and W The men and women of the Army serve are important elements of our tional military strategy and deterrer They are part of the Total Army—la power capable of responding to challenge.

The more than 550,000 men and wo of the Army Reserve are ever consci of their mission. Army Reservists proud of their contributions to maint ing the peace and remain dedicatec providing strength as part of the T Army, an Army of excellence: "ready day, preparing for tomorrow."

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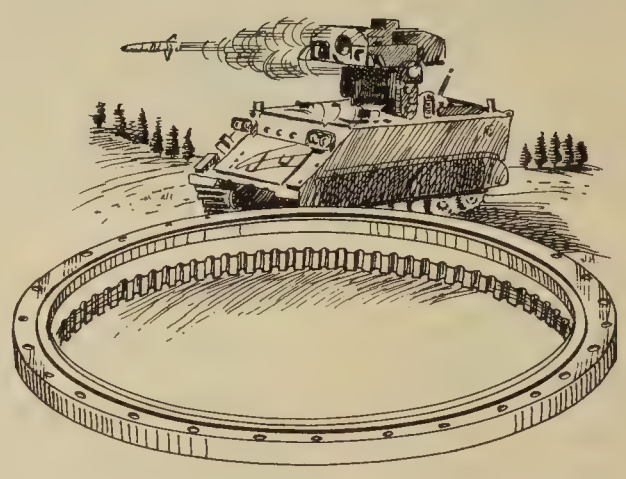
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ITV Missile Launching System

Designed by Emerson Electric Co. for the U.S. Army, the Improved TOW Vehicle (ITV) is an armored personnel carrier featuring a launcher that fires the TOW* antitank missile. The launcher's powered turret requires a train bearing that provides low torque operation, extremely accurate fire control, and the ability to withstand



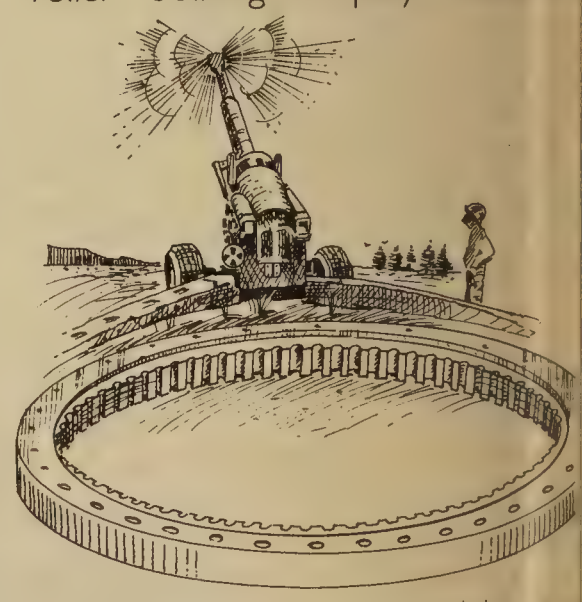
shock from firing and when traveling over rugged terrain.

Kaydon supplies a 41" O.D. 4-Point Contact Ball Bearing which features an integral gear and special seals. Kaydon also makes a Wire X® 2-Row Roller Train Bearing for other versions of this vehicle.

Towed Howitzer

Condec Corp., Mobile Equipment Division, purchases Kaydon bearings for the carriage of the M198 towed 155mm howitzer, currently in use by the Army and Marines. The train bearing must meet tough specs for rigidity, torque and weight, yet perform with precision so critical in aiming and firing this 8-ton weapon.

Kaydon's Wire X two-row roller bearing employs inserted



wire raceways in lightweight support rings to provide high load ca

*Tube-launched, Optically-tracked, Wire-guided

city. It is constructed entirely of ncorroding and corrosion resis- nt materials and features an inter- gear, anodized aluminum rings d mounting holes. This 45" O.D. aring provides precision opera- n under the harshest conditions d in extremes of ambient nperatures.

Self-Propelled Howitzer

The M109A2 self-propelled witzer, manufactured by Bo- n-McLaughlin-York (Division of

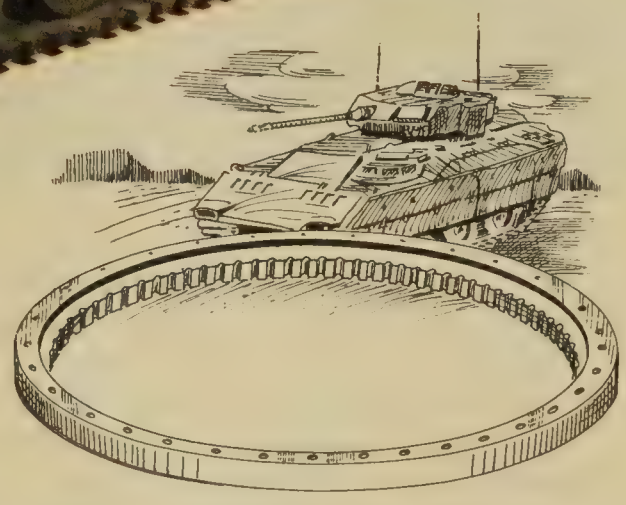


sco) for the U.S. Army, is a key ort weapon in today's ar- ed and mechanized infantry di- ns. It demands a turret support ing capable of withstanding the endous forces that result from projectiles to a distance of ly 15 miles. Kaydon was ified.

Our 4-point contact ball ing has an unusually thin and plex cross section, yet achieves radial and axial rigidity. With an nal gear, accessory mounting s and other integral features, it dds up to a complete rotation m with rugged reliability.

IFV Gun Turret

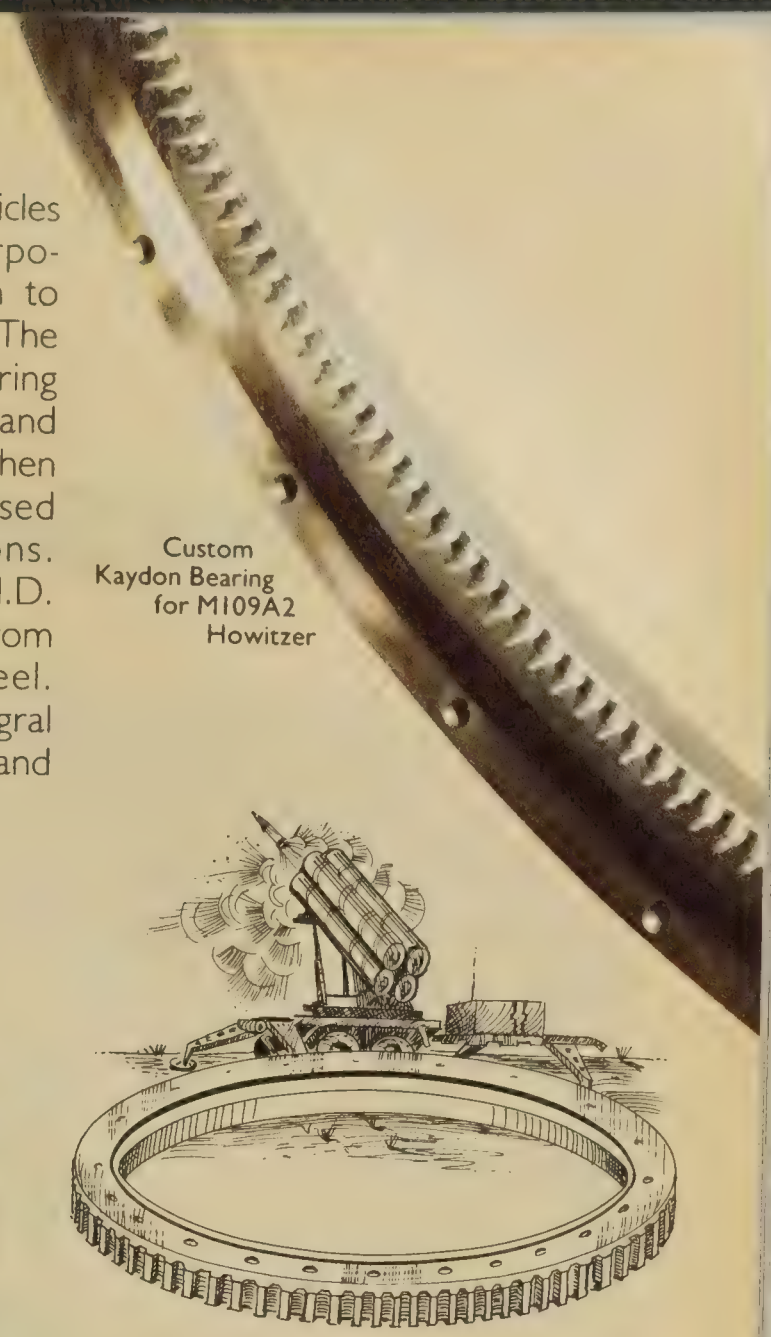
The Bradley Fighting Vehicles manufactured by FMC Corporation, are a versatile addition to the military's armed forces. The gun turrets require a bearing that accommodates expansion and contraction commonly found when dissimilar metals are exposed to temperature fluctuations. Kaydon manufactures a 60" I.D. two-row roller bearing made from aluminum and stainless steel. Incorporating integral gears and



seals, this Wire-X bearing provides the reliable rotation so necessary for this rugged terrain vehicle.

Missile Launcher Turntable

Four 2-ton missiles, firing from a mobile vehicle with rotatable launching shutes, highlight one of the military's most sophisticated air defense systems. It is designed to counter high speed aircraft and



Custom Kaydon Bearing for M109A2 Howitzer

short range missiles at all altitudes, while resisting intense electronic-jamming methods.

The turntable incorporates a Kaydon custom multiload bearing that must meet restrictive torque requirements, while providing maximum accuracy despite tremendous firing forces. We add unique gearing, sealing and mounting features along with a special phosphate coating to help keep this most modern air defense system "On Guard" and operating dependably.

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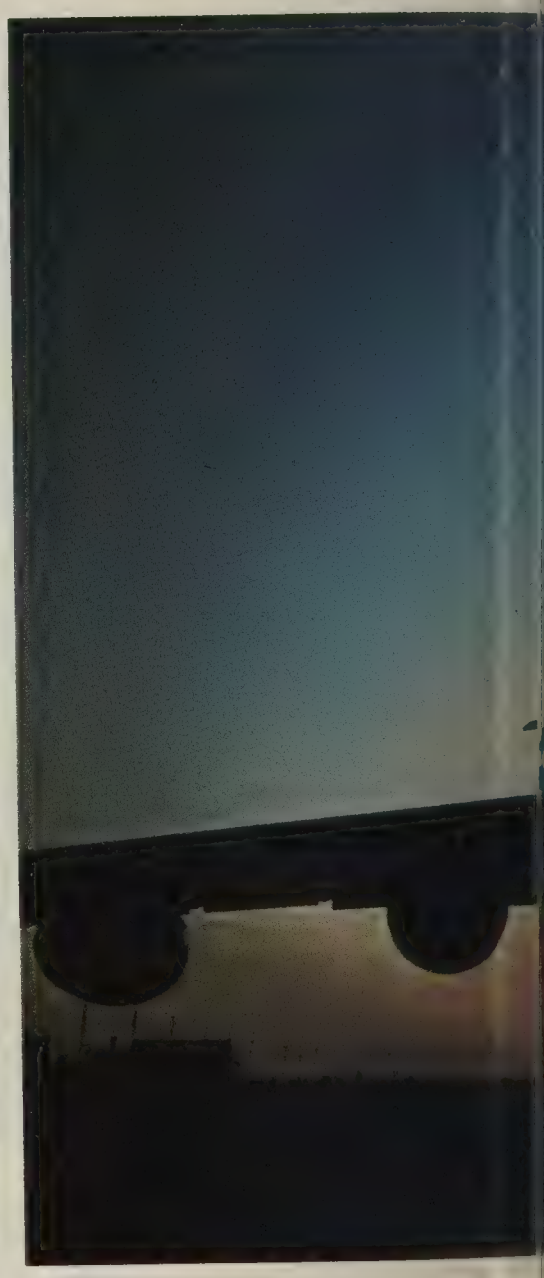
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Diverse Threats Demand

The Army is walking a narrow line between limited resources and global missions, as it attempts to transform doctrine, modernize equipment and achieve a balanced force structure, all without diminishing war-deterring readiness.





Our Army is entering a new era—one that presents new challenges and new opportunities. We are now embarked on a wide array of significant defense initiatives that will bring our military capabilities into line with changes in our national military strategy. America's paramount national interests remain unchanged: peace, freedom and prosperity for ourselves, our friends and our allies.

We continue to seek an international order that encourages self-determination, democratic institutions, economic development and human rights. We also remain committed to constructive dialogue with our adversaries, to include seeking negotiated arms reductions; however, it is clear that dialogue and diplomacy a will not ensure a peaceful world. As I ident Theodore Roosevelt pointed "Diplomacy is utterly useless where t is no force behind it."

It is also clear that the threats to national interests are increasingly div and complex. The challenge for A leadership has been to analyze the tegic environment, assess the implica for the Army and build forces which port the strategy. The ultimate obje is deterrence, an ability to keep the p by maintaining a credible force that the war-fighting capacity to respon the spectrum of possibilities.

While flexible response has rema the centerpiece of our military stra

Force Flexibility

By Lt. Gen. Carl E. Vuono
Deputy Chief of Staff
For Operations and Plans



Photo: Frederick Sutter

ecognition that we now share rough
y with the Soviets at the strategic
ar level has increasingly shifted the
n of deterrence toward conventional
. Consequently, we must have forces-
ng that are capable of rapid response
signals of aggression—to react dur-
ıe critical preconflict stage or to ar-
in threatened regions in sufficient
to gain a needed tactical edge for
ving forces.

ıally important, our conventional
must be capable of providing the
ıal command authorities with a range
tions for employment in any con-
ıcy. The ability to respond across
ɔectrum of conflict, on varied ter-
and in differing environments, requires a total force posture that is flexible, effective and balanced.

To develop these capabilities, the Army is undergoing fundamental changes in doctrine, unit organization and equipment. We are working diligently with our sister services to ensure that we are capable of deploying and fighting as an interoperable, coordinated team.

At the same time, we continue to maintain close coordination and mutual cooperation with our allies, ensuring that our mutual efforts on the battlefield will be well integrated and complementary.

This is an exciting era for the Army. The basis of deterrence is the enemy's recognition of our ability to prevent him from achieving his objectives by force,



The Army now has 21 battalions' worth of these Bradley fighting vehicles, which are essential to maintain its mechanized close-combat capability.

and we are continuing to develop the necessary capabilities. What follows is a progress report highlighting some of the key issues and challenges facing our Army today.

The Army's war-fighting doctrine has been in a state of accelerated evolution since the end of the Vietnam war. In 1976, our doctrinal focus rapidly shifted back to Europe, with an emphasis on tanks, precision munitions and active defense to cope with newly expanded Warsaw Pact capabilities.

AirLand Battle doctrine, which formally emerged in the 1982 version of *Field Manual (FM) 100-5, Operations*, reflects a synthesis of thinking on both the nature of the next war and the lessons of past wars. It is a doctrine that emphasizes maneuver and stresses the spirit of the offense even in defensive operations. It relies on commanders' broad concepts, junior-leader initiative, maneuver, agility and synchronization of effort.

The doctrine places particular emphasis on actions in depth: attacking the enemy throughout the full depth of his formations is the key to defeating a numerically superior force. In a significant shift of emphasis, AirLand Battle restores our focus on the operational level of war. The operational level connects the tactical focus on individual battles with the strategic aims of war by addressing the planning and execution of sequences of battles and campaigns.



LT. GEN. CARL E. VUONO became Army deputy chief of staff for operations and plans in June, following a two-year tour as deputy commanding general of the Training and Doctrine Command and commanding general of the Combined Arms Center and Ft. Leavenworth, Kan. Gen. Vuono was commissioned in Artillery at graduation from the U.S. Military Academy in 1957. He also holds a master's degree in public administration from Shippensburg University of Pennsylvania and is a graduate of the Army War College. Gen. Vuono twice served in Vietnam, with the 1st Infantry Division during 1966–67, and commanding two different artillery battalions of the 1st Cavalry Division during 1970–71. During 1971–72, he was at Department of the Army, first as an operations research systems analyst in the Office of the Assistant Vice Chief of Staff, then as executive officer to the project manager for the reorganization of the Army in the Office of the Chief of Staff. Gen. Vuono served as chief of the budget division in the plans, programs and budget directorate of the Office of the Army Assistant Chief of Staff for Personnel during 1973–75, then commanded the Division Artillery of the 82nd Airborne Division. He returned to Washington in 1976 to serve a year as executive officer to the Army chief of staff, then went to Ft. Riley, Kan., for two years as assistant division commander of the 1st Infantry Division (Mechanized). During 1979–81, Gen. Vuono was deputy chief of staff for combat development at Training and Doctrine Command, followed by two years in Europe in command of the 8th Infantry Division (Mechanized).

This aspect of war fighting will enab us to allocate resources more effective on the battlefield, to seize the initiati and exploit tactical success. The doctri also emphasizes the Army's role as a pa ticipant in joint and combined operatio at both the tactical and operational leve

Much remains to be done as we co tinue our doctrinal development. AirLa Battle doctrine can only achieve its f potential if we have knowledgeable lea ers, effective and reliable command a control, well-trained forces and leth efficient weapons systems.

We are now implementing a bro based education process to sure that all levels of comma share a common understanding of the d trine. Expanded educational efforts, incl ing simulations and war gaming at ev level, are being implemented to addr these challenges. In NATO, our "how-fight" doctrine is adapted to the all environment in support of the concept operations espoused by the supreme lied commander, Europe, including att of enemy offensive follow-on forces.

At the same time, Army-Air Force ag ments are beginning to give the ten tactics, procedures and techniques of



The new light infantry divisions will depend greatly on leadership quality and thoroughness of training to implement their tactics.

A five-ton truck and an M113 armored personnel carrier wait their turn to load on an Air Force C–141B transport.



Photo: Frederick Sutter



1¼-ton HMMWV gh-mobility, multi- ose wheeled ve- hicle) will be the khorse vehicle of ne light divisions, erving as both a op carrier and a eapons platform.

Battle a needed joint operational ility.

hortfall affecting the proper execu- f our doctrine is the present insuffi- of weapons systems that will per- s to conduct deep, close and rear operations simultaneously. To be o counter Soviet advantages in ers and surprise attack options, we exploit their vulnerabilities.

must have the capacity to disrupt lans and delay the pace of their at- hereby causing them to react to our s. A full realization of our doctrinal ial will be brought closer by the g of some key intelligence acquisition systems, information fusion and command and control systems, and weapons delivery systems with "smart" submunitions.

There are related improvements under way in our air defense, communications links, munitions lethality, close air support and night-fighting capabilities. These initiatives are essential for the realization of our AirLand Battle capabilities; we must ensure that resource constraints do not deny us the tools needed to implement our how-to-fight doctrine.

Our light forces initiatives have been designed to enhance flexibility across the spectrum of conflict. New light infantry divisions and larger, more capable special operations forces (SOF) lead the light forces initiatives. In the early days of a crisis, light forces could be deployed rapidly to enhance deterrence and defuse tensions. SOF could be employed in any of several roles: foreign internal defense, intelligence gathering, military training or direct action, to name a few.

The light infantry division is a very attractive force alternative for early deployment in a crisis as a preconflict measure. The division can be deployed in a dramatically reduced number of C-141 transport sorties, as compared to its heavy counterpart.

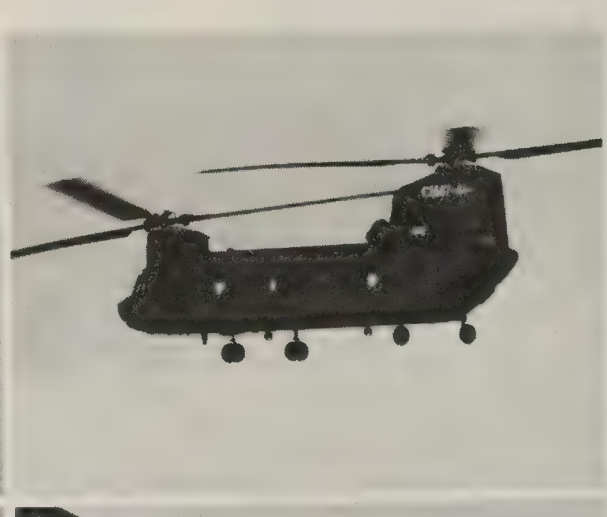
In a fluid situation, this feature makes repositioning of the division a feasible alternative as we adjust to meet changing circumstances. Employment of a light infantry division in a crisis displays national commitment and resolve while placing minimum demands on scarce airlift assets.

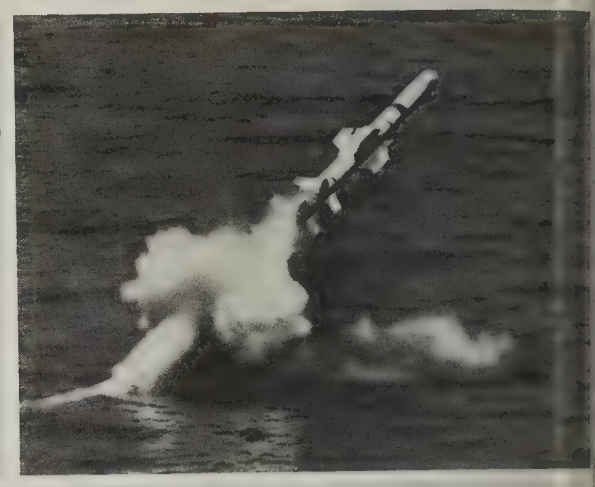
The Army has embarked on an evolutionary process of force balancing which involves the Total Army, both active and reserve components. The mid-term goal is a 28-division land force which provides strategic flexibility, broad utility and joint war-fighting capability. To be successful at deterring and to be capable of winning

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uld deterrence fail, our forces must be ctive and deployable. Last year, we ribed the initial phases of restructur- our Army to achieve these goals. This r I can report some significant ad- ces and some remaining challenges. ur force structure objectives remain track and are being implemented as dly as resources will permit. We have verted the 7th Infantry Division (Light) he light infantry design, activated a d Ranger battalion and a Ranger regi- tal headquarters, expanded our avia- structure, and set in motion the acti- on of the 10th Mountain Division ht Infantry).

dditionally, the programs are taking e for activating the 6th and 29th (an y National Guard division) Infantry sions (Light) and converting the 25th ntry Division to the new design. The infantry division structuring process ld conclude by 1989, as the chal- es of building facilities for stationing new units are overcome.

addition to creating the five light in- y divisions, we are also redesigning 32nd Airborne, 101st Airborne (Air ult), and 2nd Infantry Divisions and 9th Infantry Division (Motorized). re continuing to streamline the "Di- n 86" design, and all 14 heavy divi- are being so modified, with most of space savings being applied to en- ed corps war-fighting capabilities. is in line with our renewed empha- n the operational level of war.

e corps is the principal operational ument in the execution of campaign : assembling assets at that level, n were formerly distributed among livisions, will give the corps com- ler a capability to shape the fight was lacking previously. The redesign e Total Army has as its main goal est use of all available assets to fight theaters.

at part of the force structure redesign ncludes the creation of new units een achieved within a fixed active onent strength of about 781,000 by mizing, reallocating missions, im- ng productivity, using civilian man- wherever possible, exploiting tech- y and expanding the reserve com- ts. We have produced significant ions in manpower space require- by revising work-load factors and ion rules, centralizing selected func- at corps level and above to incor- modern capabilities, and adopting ous technology enhancements, par- ly in logistics.

The Army National Guard and the Army Reserve now provide almost half of our fighting structure and two-thirds of our combat service support. By fiscal 1991, the reserve components will represent about half of the Total Army. We must be careful, however, in determining what we can realistically ask the reserve components to accomplish in the way of missions, training and rapid mobilization to support our deployment scenarios. The priority of equipment and support for early-deploying Guard and Reserve forces is very high and includes the accelerated fielding of some of our latest weapons and equipment in selected reserve components units.

Our structure should reflect the best possible synthesis of strategic, doctrinal and resource imperatives, but we will never have all the forces we need to eliminate risk. Our programs in this regard are sound and focus on resilient, deployable combat units which can execute a broad array of missions worldwide; but regardless of where on the globe Army forces are deployed, they will require lift and augmentation.

Our capability to project combat power is improving because of expanded and enhanced strategic lift capabilities, as well as our efforts to preposition equipment and lighten our forces. By 1990, the Navy and the Air Force will improve significantly the Army's ability to deploy. The surge capability in sealift will be very close to the surge shipping requirement of 5.0 million dead-weight tons of sealift. This will represent a 36-percent increase over today's capability of 3.2 million dead-weight tons. The airlift capability will move from 32 million ton-miles a day to 51 million ton-miles by 1990.

Modernization continues as rapidly as funding and production schedules will permit. We have fielded 35 battalions of M1 tanks, 21 battalions of M2 and M3 Bradley fighting vehicles, 22 batteries of multiple-launch rocket systems (MLRSs) and 34 companies of Black Hawk helicopters. Our procurement of missiles, trucks, communications and intelligence gear and soldier equipment is also substantial. Yet the Army is only partially there.

More than the other services, the Army's weapons and equipment replacement processes were hindered by the economic requirements of the Vietnam war. We are only now embarked on our first real wave of extensive force modernization; but, with the recent reductions in budget authority, we may be forced to stretch out programs, to slow our efforts markedly and, perhaps, even to eliminate important development and acquisition initiatives.

Our units already are challenged to sustain their day-to-day readiness while reorganizing and fielding new equipment concurrently. The distortions and detours resulting from program and budget cuts compound the turbulence associated with rapid change.

A final challenge confronting our force balancing and modernization efforts is the dilemma of needing to increase opportunities for leaders at all levels (including officers, warrant officers and NCOs) to receive full-time schooling and specialized training while, at the same time, continuing to man our active component units at an appropriate level of strength.

New doctrine and new skills demand that increased time be given to formal education and training, but new combat units also have a priority claim on available manpower. Within a necessarily con-



A column of M113 armored personnel carriers under way during a NATO winter exercise.

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e Pershing II intermediate-range listic missile, seen here at launch, now being deployed in Europe in nsiderable numbers.

ed end strength, we face some diffi- ompromises in balancing professional opment requirements with the need ep adequate numbers of leaders in nits.

basic thrusts of force balancing odernization remain embedded in lans, programs and budgets. We roceed on our current course, per- t a slower rate, but with the even- ealization of our major objective— lern, quality Total Force, designed and equipped to perform its mission.

Our plans, our doctrine and common sense argue for comprehensive, integrated joint force operations. While history suggests that service interests are difficult to overcome, much progress is being made. The recent gains that have been made in this area are a testimony to leaders in all the services. The historic Army-Air Force Joint Force Development Memorandum signed last year by both chiefs of staff gave enormous impetus to the effort by the Defense Department to foster joint plans, programs and procedures.

The initial list of 31 Army-Air Force joint initiatives has grown to 34 and will continue to expand. Over half of the initiatives are implemented already, and proposals are being developed to address the rest. The joint initiatives run the gamut from air defense to joint intelligence acquisition to deep-attack missiles. The test of fidelity is passed when a service surrenders a system and its funding to another service, or when one service argues in behalf of another service's budget line.

The Army and Air Force are demonstrating their faithful commitment daily in service staff coordination and in the field. Army and Navy logisticians also have signed an agreement regarding strategic sealift and cargo unloading responsibilities. The services have developed joint programming and budgeting procedures for shared programs, thereby avoiding duplication and competition.



An armored vehicle mechanic makes a repair weld on a center-guide horn of a tank track during an interlude in field manuevers.

The Army has great interest in joint force initiatives because of our dependence on strategic lift to move Army forces to a developing crisis in time to deter or, should deterrence fail, to gain tactical advantage. Equally important is the essentially joint nature of our doctrine. It cannot be executed unilaterally. We require Air Force platforms in addition to our ground-based weapons systems, and we must synchronize Army and Air Force operations. The Army needs Air Force support in the theater of operations, at every level of conflict intensity.

The most visible joint systems are the joint surveillance and target attack radar system (J-STARS) for target intelligence, the joint tactical fusion program (JTFP) for synthesizing battle information and the joint tactical missile system (JTACMS) for attacking deep targets. These are crucial tools for implementing AirLand Battle doctrine because they will be cornerstones of our "deep battle" capability.

The procedures for ground-based air defense are being reexamined, as are the processes for battlefield air interdiction and close air support. The Army strongly supports Air Force acquisition of the C-17 transport for inter- and intratheater airlift, and both services are working together to define the operational requirements of this new aircraft. The Air Force Tactical Air Command and the Army Training and Doctrine Command have institutionalized the joint process, and interservice cooperation at the major command level is becoming routine.

One of the most promising developments in joint training is the Army's participation with the other services and the unified and specified commands in the joint training enhancement committee (JTEC). The JTEC process will help to identify joint training issues and make recommendations for action to the Joint Chiefs of Staff, the services and the joint commanders in chief.

In the case of joint force capabilities, the sum is greater than the parts. We get more combat capability when the services act in concert. Joint war fighting is not only essential from the standpoint of doctrine and the threat, it is essential to avoid duplications and waste. The joint initiative objectives we are presently achieving will open up new opportunities and new goals for the future.

The joint exercise process, which is rapidly expanding within the unified commands, is an important means of improving our collective combat efficiency. By testing joint procedures during exercises,

we ensure that they are viable and capable of execution in combat. The mutual respect and confidence developed among the services as a result of the focus on joint force initiatives will bear great dividends in the years ahead.

While the spectrum of potential conflict ranges from terrorism to global nuclear war, the spectrum of conflict environments runs from beneath the seas to the distant reaches of space. Historically, the Army has had a central role to play in military space-related activities. The Army developed the Jupiter and Redstone rockets used in the early years of space exploration, pioneered the use of satellite systems for communications and continues to have responsibility for research on strategic defensive systems. Today, as in the past, we are committed to supporting those programs permitted by U.S. policy which offer the most promise for the military exploitation of space.

There is an urgent need to explore the Army's roles and goals in space and then to integrate them into doctrine, plans and programs. Nowhere is the need for joint force initiatives more evident. All the services are in the process of reexamining their future commitments and roles in space. The aim is to identify space-related requirements, measure our capacities to meet them and jointly determine a division of effort. We must work with the Air Force and Navy to develop joint operational concepts and organizations and a coordinated investment strategy.

The formation of a unified Space Command this year will provide an umbrella organization for the burgeoning national effort to fashion a coherent military space program in support of our commanders. The Army's space management structure already includes a dedicated office, a senior guidance council and a special study group whose goal is the development of a near-term space master plan.

As the proponent for ground-based missile defense, the Army has a central role to play in the conduct of those studies which hold center stage in the President's strategic defense initiative. The key issues involve technological feasibility, cost and the impact on arms control. At the same time, there is a space dimension to the imperative of AirLand Battle doctrine.

At all echelons, the need for space systems to support command, control, communications and intelligence (C^3I) and the deep battle can only grow. Beyond the requirements already noted, there are space-related joint and unilateral initiatives in surveillance, combat service support, integrated tactical air defense and air space coordination, mapping, geodesy and weather. The road map drawn today by our best minds will be used to mark our progress in this vital dimension for years to come.

The Soviet Union's offensive chemical capability is a significant and growing threat, and our retaliatory capability is a small and diminishing deterrent. Our dilemma is that factual arguments are rarely persuasive to those who are opposed to modernizing our chemical stockpile; nevertheless, the services must continue to press for needed improvements, for without the incentive of facing retaliation in kind, the Soviets will neither be encouraged to pursue verifiable arms-control agreements nor be dissuaded from initiating chemical warfare.

If we can replace our current stockpile of largely obsolete chemical munitions with binary weapons, significant advantages accrue. We obtain safe, usable and more effective munitions with which to deter the Soviets. The net effect of our enhanced capability will be to reduce the likelihood of chemical employment and avoid a situation in which we have few options if faced with widespread chemical warfare.

Finally, lifting our self-imposed 1969 moratorium on chemical weapons production may induce the Soviets to negotiate a chemical arms control agreement. Recent incidents of chemical weapons use in Asia indicate that the Soviet Union and its client states are not dissuaded from waging chemical warfare by adverse public opinion.

The chemical defense picture is considerably brighter. Our extensive efforts to improve chemical defense clothing and equipment, expand our chemical unit structure and improve chemical training have been very successful. We have fielded more effective protective masks and overgarments, improved detection and decontamination equipment and incorporated more NBC (nuclear, biological, chemical) personnel into units and staffs. Our individual and unit training programs are considerably improved, as reflected in the results of common tasks testing and Army training and evaluation program training exercises. In the coming years, we will be fielding more effective and lighter weight chemical apparatus of all types.

Among our most fundamental and important responsibilities is the readiness of the Army. In today's volatile world it is more important than ever that we man,



equip and train our forces in peacetim so that we can mobilize, deploy, fig and sustain them in wartime. Readine is both an essential element for deterren of aggression and the key to success the battlefield.

The Army today is more ready than any time in recent history. This conc sion is based on a comprehensive asse ment process that includes three forn analytical tools and additional key in cators.

The unit status reporting system i valuable internal operations and mana ment tool which provides a review selected unit readiness indicators at a s cific point in time. A review of unit tus reporting trends shows that during period 1980–85 the status of training quality of personnel in Army units substantially improved.

During the same period, however, equ ment-on-hand ratings often showed a cline even though we were fielding n materiel. The explanation has to do w the changes in authorization docume proceeding ahead of equipment delive in units scheduled for modernization. unit status report (USR) indicates w percentage of its authorized equipme unit has on hand. If the unit's new aut rization is for, say, M1 tanks, but i presently operating M60s until a l delivery date, the USR would incorre imply that the unit was not ready combat.

We are working to improve the s chronization of equipment fielding documentation changes to eliminate



distortions in equipment-on-hand ratings. We must do this so that it does not appear that we suddenly became "unready" simply because we changed equipment authorizations. At the same time, the Army is focusing on the real equipment problems that do exist and working to improve its unit status reporting system. The primary objectives are to make the report more reflective of a unit's status and improve our ability to use automation to analyze reported data, thereby increasing its usefulness to the Army.

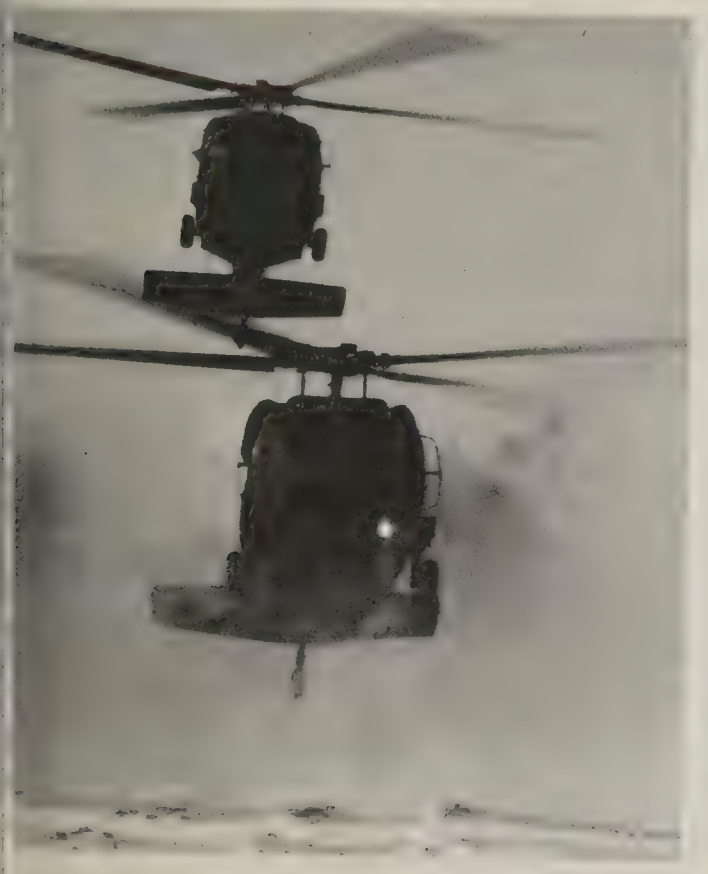
The unit status report is not designed to reflect improvements in war-fighting capability. For example, two tank battalions, one equiped with 54 M60 tanks and the other equipped with 58 M1 tanks, can both be reporting the same unit status even though the modernized battalion has a much greater war-fighting capability than the one equipped with the old tanks.

To capture the improved capability that units can realize as a result of force structure and equipment changes, the Army has recently developed a system called "measuring improved capability of Army forces" (MICAF). MICAF shows that the Total Army divisional war-fighting capability has increased by 18 percent since fiscal 1980. We project an increase of 55 percent will be realized by fiscal 1988, assuming congressional support of the fiscal 1986 budget and a two-year funded delivery period. These results clearly demonstrate the payoff from force structure and equipment changes.

Infantrymen (left) *train on an assault course enlivened by computer-controlled pop-up targets.*



The M1 Abrams main battle tank (above) *is the centerpiece of the Army's program to modernize its close-combat mechanized forces.*



UH–60A Black Hawk helicopters land in a snow field during winter field exercises.

The Army operational readiness analysis (OMNIBUS) is an annual study effort that evaluates the Army's ability to deploy, fight and sustain forces in support of a global war-fighting scenario. OMNIBUS results show that recent initiatives to improve strategic deployment, personnel and equipment status, modernization of heavy and light forces, and personnel and materiel sustainability have increased the Army's ability to deter war or to wage war if need be.

The measurement of readiness is a complex process, and our analytical tools do not address all of the factors that affect the readiness of the Army. Therefore, to evaluate fully the readiness of the Army, we must use other key indicators in conjunction with the analytical tools, such as morale, unit cohesiveness, leadership, quality of training, status of facilities, educational level and status of discipline. The importance of these factors cannot be overstated. As Gen. George S. Patton Jr. recognized: "Wars may be fought with weapons, but they are won by *men*. It is the spirit of men who follow and of the man who leads that gains the victory."

Some of these factors are quantifiable and others are not. In the latter cases, we must call on the expert professional judgment of our unit leaders to ascertain where we stand. Progress in these areas does not just happen; it must be cultivated through the proper application of resources and sound programs.

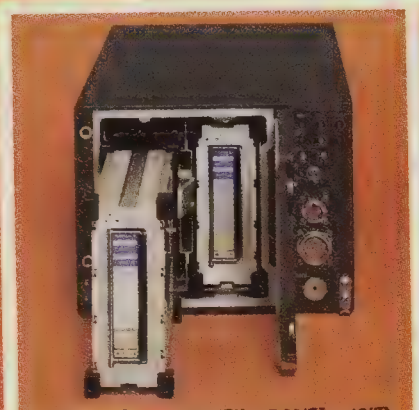
Training readiness is more than unit training days or exercise frequency, but those numbers are indeed going up. The National Training Center at Ft. Irwin, Calif., will have 28 battalion rotations next year (including four reserve compo-

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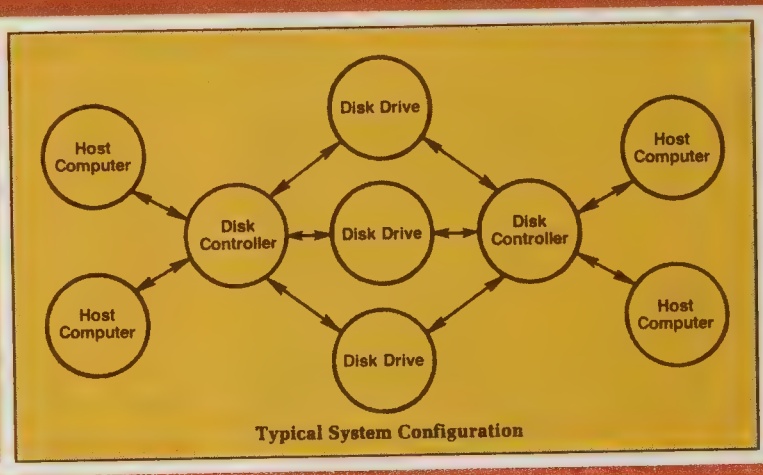
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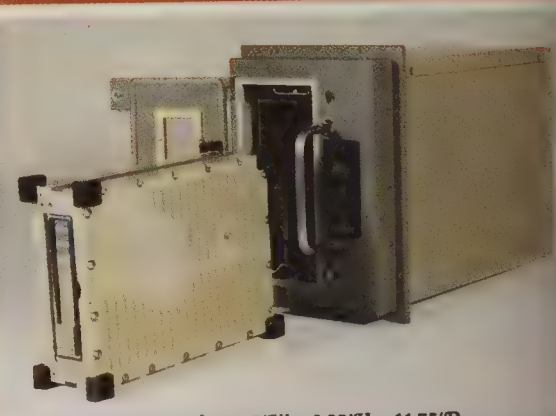
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s units), and its training opportuni- are clearly the best in the world. lernization presents a growing chal- e to our trainers, who find ranges ming more and more limited and ing resources, especially ammuni- more and more expensive.

he long-term solution to limited training resources depends upon the judicious balancing of field ing and live-fire exercises with simu- n and war gaming. Our substantial tment in devices, simulators and sim- ons already has begun to pay signifi- dividends.

ır support of the force is markedly oved. In recent years, we have more doubled the equipment stocks prepo- ed in Europe and will continue mak- progress toward filling six division Across the board, our war-fighting s of munitions, weapons, equipment, and supplies are increasing, with oal of achieving an ability to sustain



The Army is emphasizing chemical defense training, including individual protective measures (above).



Tankers wash down their M1s after a day in the field.

ed forces in a protracted conflict. ough competition with other pri- equirements will create some short- he picture is considerably brighter t has ever been. Modern support nent such as trucks, materiel hand- quipment, survey equipment and nance tools are entering the inven- growing numbers and have im- the efficiency and equipment read- f the force. At the same time, we atedly upgrading and replacing the aging and deteriorating physical facilities where our soldiers live and work.

Reserve components readiness is vitally important to our mission readiness, since reserve units constitute a growing percentage of our early-deploying fighting and support forces. Improvements in the readiness of our active component force are mirrored in Army National Guard and Army Reserve units and are a result of increased emphasis on equipping, training and supporting these reserve units. In fact, they will receive, on an accelerated schedule, $1.4 billion worth of equipment in both fiscal 1985 and 1986, after having received almost $1 billion in fiscal 1984.

The best news is that the most important component of force readiness, the soldier, is the finest in the memory of those serving. All key statistical measurements —educational level, reenlistment, indiscipline, training scores—support that conclusion. There is ample justification for asserting that our highly motivated, well-trained, well-equipped, disciplined and well-led soldiers are the clearest evidence of our improved state of readiness.

It is appropriate to conclude this progress report with a discussion of force readiness and the human component of that readiness. Whether or not we can accomplish our mission as an Army depends directly on the quality of our soldiers and their leaders.

I have attempted to highlight the major issues confronting us as we move forward into a period of increasingly limited resources and difficult prioritization. Our central mission is to defend the nation and its interests worldwide and to deter conflict by clearly projecting a capability to win if required to fight, anywhere on the globe. That capacity is dependent on joint and combined efforts with the Navy, Air Force and our allies, but the centerpiece of American military strategy is and will remain Army land forces. No combination of ships, planes or over-the-shore combatants can achieve the decisive results of Army forces.

Efforts to develop doctrine across the spectrum of conflict and to build a matching force structure are going forward in tandem with total force modernization. This presents an enormous challenge to our Army. It is certainly a tribute to the professionals who man our units and organizations that they are accommodating many rapid changes so well.

It is absolutely essential that, as we go forward, we expand our horizons and incorporate the dimension of space and the spirit of joint force cooperation into everything we do as an Army. The ultimate challenge is to remain ready from day to day while building the next generation of Army units and leaders. It is a challenge that can only be met by selfless, ethical and competent leaders who can teach and inspire subordinates.

The 1985 Army theme of leadership is most appropriate at this critical juncture in our history. Solid leadership is the key to a strong, efficient Army and a strong, secure America.



Patriot launches a new era in Europe

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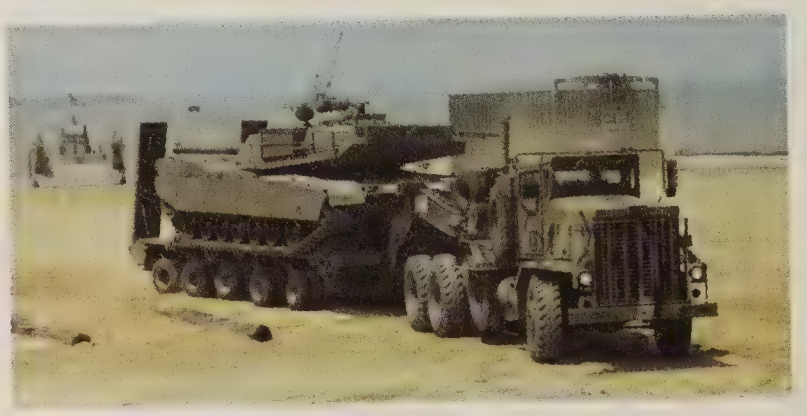


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The Army Family Action Plan is a demonstration of today's commitment to the human and material needs of Army family members.

The plan is designed as a total program to deal with a wide range of Army Family problems on a systematic, long-term basis. It includes measures to improve housing, child-care, medical and dental care, and many other services and facilities for Army families.

The Chief of Staff, General John A. Wickham, and Sergeant Major of the Army Glen E. Morrell, are totally committed to this plan and have pledged their full support.

The construction of over 2,500 Army family housing units has already begun. Many new child-care facilities have been approved for construction; 250 have already been improved. A Health Facility Modernization Program has also begun. And presently, employment resource centers are being established to help expand employment and priority placement opportunities for Army family members.

Your problems can't be solved immediately, but they *will* be solved. The Army has always had the responsibility of defending the nation. Today it has another important responsibility – to continue to improve the lifestyle of the Army family.

ARMY FAMILY. BE ALL YOU CAN BE.

The Army's Personnel 'Family':

Catalyst for Improvement Of Unit Command Climate

By Lt. Gen. Robert M. Elton
Deputy Chief of Staff for Personnel

It is the S1 and his or her people who help the commander shape this climate in the areas of discipline, drug and alcohol abuse, equal opportunity, quality of life, safety, leadership and personnel management.

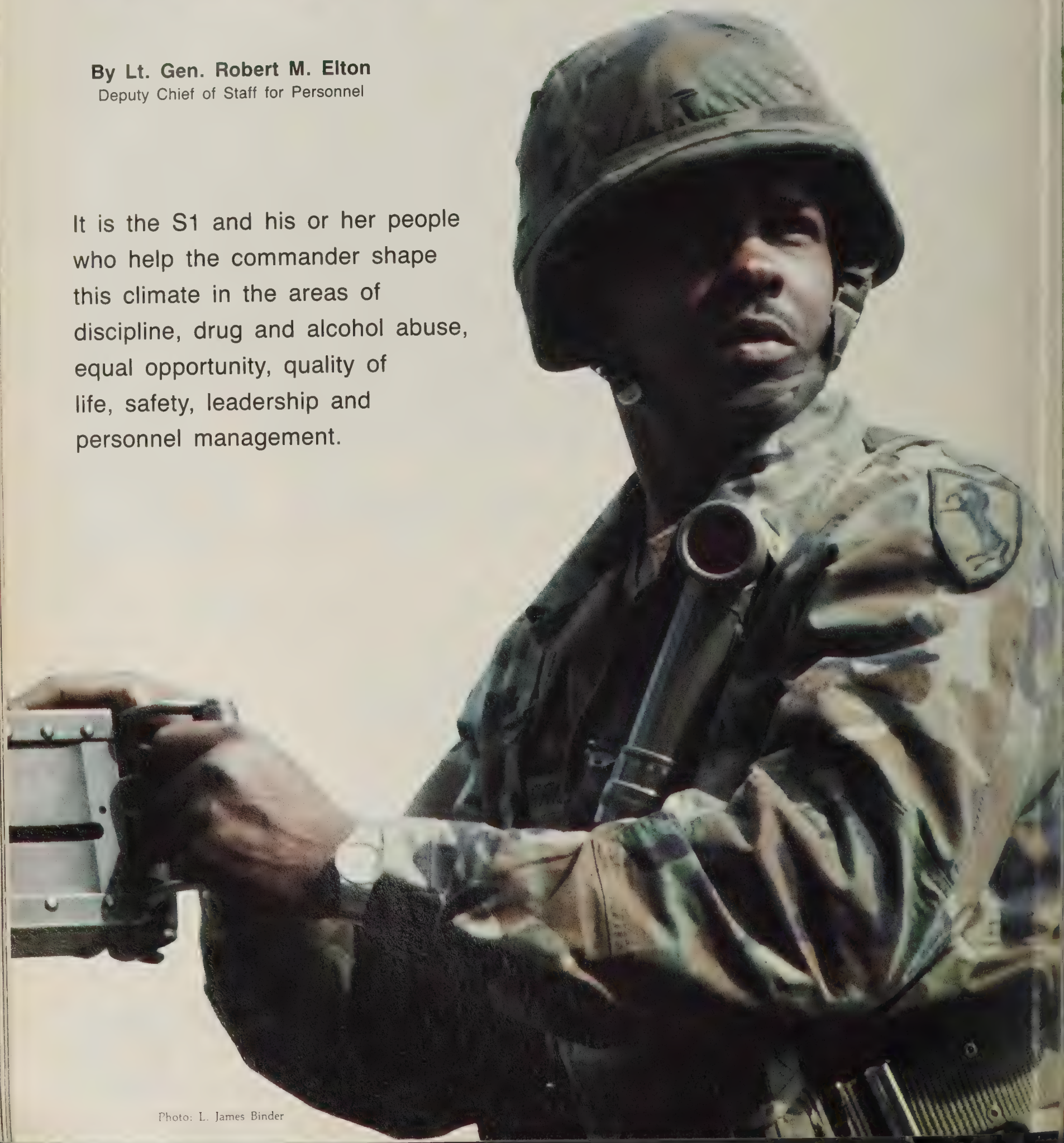


Photo: L. James Binder

■ very commander worth his salt
l strives for a climate in his unit in
■ which each soldier is anxious to
is best every day. It comes when the
er feels that his contribution is essen-
and appreciated. When the soldiers
about "we" and "us," you know you
etting close.

mmand climate is the atmosphere or
onment created within an organiza-
by a commander and his chain of
nand through their exercise of lead-
. It is my thesis that the healthiness
climate may be determined through
sis of the many personnel programs
ng in the organization. Further, I
it that it is the personnel "family"
must serve the commander as the
st for continued improvement of the
and climate.

s year, the Army theme is "leader-
—effective stewardship of the Army
levels and for all programs. In the
Army leaders have focused on out-
s the products of their leadership.
35's expansive review of leadership,
pe to shift the focus more clearly
ut. There is a direct link between
and its resulting command climate.
ew commander brings three unique
s of leadership to a unit: vision,
unication and climate.

se aspects are unique because they
ent the commander. They are a re-
n of his or her style and purpose;
re the commander.

ommander's vision can be compared
ap, but it is more than goals and
ves. The vision represents for the
e critical path the unit will follow
t its commitments, maintain a high
of readiness and provide for the
e of its soldiers. Some commanders
prematurely with little thought for
ng but immediate achievement;
never set it at all, and the unit



misses the tremendous impact of their leadership.

The command climate is created through the diversity of a commander's leadership styles. The creation of a high-performance command climate requires the full intensity of a leader's skill. When it is approached, the entire unit begins to work with shared and understood goals—and little frustration.

By assessing climate, the commander charts his progress on the map or "vision." Like an artist who shades a picture to convey a specific feeling, a commander who understands the component parts and nuances of command climate can change the tone of the climate through guidance and direction. Clearly, of the three aspects of leadership outlined previously, climate is the most dynamic but often receives the least attention.

The commander's challenge is to understand the climate and identify the means to shape it to match the vision. If a commander employs the full talent of the personnel family, this can be the catalyst that brings about change in the command climate—one that also is sensitive to the effects of change.

Our challenge is to focus the role of the S1 and the personnel family. Gen. John A. Wickham Jr., shortly after becoming Army chief of staff, provided the impetus for this vision by adding "leading and caring" to training and maintaining for Total Army readiness. His November 1984 message to the Army leadership argues that we must ensure that these two measures are not ignored. He stated: "How well all of us address these essential elements will determine just how capable our Army will be to meet the mission entrusted to it."

Commanders can no longer afford to use the S1 as a "utility infielder." Unit readiness will only be attained through commitment and cohesion of all the members on the team, the unit soldiers. It is the S1 and the personnel family, as the command climate catalysts, who help commanders shape the command climate in such areas as discipline, drug and alcohol abuse, equal opportunity, quality of life (soldiers and family members), safety, leadership, personnel management (force alignment, promotion, retention, reclassification and physical performance) and other organizational climate factors such as stress management.

Drug testing through urinalysis allows commanders to decisively deal with abusers. In early fiscal 1984, the Army re-



Photo: Frederick Sutt

A staff sergeant instructor feeds ammunition for an infantry trainee during range practice with the M60 machine gun.

viewed its urinalysis drug testing programs. The most significant outcome of the review was the identification of positive steps to restore credibility to the Army's drug testing program by standardizing lab procedures, increasing the number of test quotas, reducing turnaround time and achieving absolute accuracy on sample identification. Drug abuse continues on a downward trend, as measured by surveys and laboratory test results.

Although it is encouraging to see that trends in drug abuse continue to decline, it is also important to determine why they are declining. Command emphasis on the program has been a major factor, as has continued recruiting of young men and women of high quality.

To maintain the positive trend, commanders must constantly enforce Army policy on drug abuse and maintain an aggressive urinalysis program. Survey results demonstrate that 55 percent of admitted abusers were deterred from drug use by urinalysis and over 73 percent want a tough, thoroughly enforced drug program. Although urinalysis is a commander's program, the S1 is the primary mover to ensure that the urinalysis program is effectively managed.

The Army recognizes that alcohol use is legal and socially acceptable. Alcohol must be removed from the center of attention and deglamorized, however. Clearly, individual health and unit readiness require restrictions on alcohol use. Leaders must develop organizational standards to shape a climate in which alcohol abuse and resulting misconduct are not tolerated.

Rehabilitation is an effective program for problem drinkers. Enrollment in such a program should not carry a stigma. Recovering problem drinkers should be totally integrated by being returned to jobs for which they are trained, although rehabilitation failure can be used as a basis for separation. The command climate catalyst is the commander's link to a successful program—one that includes discipline and rehabilitation.

Equal opportunity is a responsibility of command and a function of leadership. Leaders at all levels realize that equal opportunity is not merely a soldier welfare concern but a factor in establishing a positive command climate. An environment in which all soldiers perceive that they are treated with fairness, justice and equity is important to development of confidence in themselves and the other members of the team. To assist the commander, the Army has establis equal opportunity adviser (EOA) positic

Outstanding noncommissioned offic (NCOs) from all military occupational s cialties (MOSs) are being selected for f mal training at the Defense Equal Opp tunity Management Institute and awar a special qualification identifier of " Upon completion of schooling, they detailed for one assignment as an E (there are approximately 500 in the my, generally at brigade level). The jective is to assign them to units in wh their primary MOS is the same as tha the preponderance of unit soldiers. program provides commanders with c ible equal opportunity assistants for short term and weaves increased sens ity for equal opportunity into the lea ship structure of the NCO corps in long term, as the advisers return to mal MOS duties in their next assignm

Although the equal opportunity e ronment remains positive throughout Army, leaders at all levels must cont to maintain proactive programs. The to an effective climate is credibility fully realize the Army's human e each soldier must feel that fairness, tice and equity establish the corners



LT. GEN. ROBERT M. ELTON became deputy chief of staff for personnel in June 1983, after having served as commanding general of the 9th Infantry Division, Ft. Lewis, Wash., since August 1981. Gen. Elton was commissioned in the infantry from the U.S. Military Academy and holds a master's degree in engineering physics from the University of Virginia. A graduate of the Marine Corps Command and Staff College and the Army War College, he has, during over 30 years of active commissioned service, served as a brigade commander with the 82nd Airborne Division, Ft. Bragg, N.C., and as chief of staff and then assistant division commander, 3rd Infantry Division (Mechanized), U.S. Army, Europe. Upon returning to the United States in August 1978, he became, first, director of the Officer Personnel Management Directorate and later commanding general of the Army Military Personnel Center, Alexandria, Va., before assuming command of the 9th Infantry Division.

An infantry patrol hears a briefin its objective before a training exe

equal opportunity. The equal opportunity adviser can keep track of promo-, punishment, awards, discharge, reenment and indiscipline rates to help the mander keep his thumb on the pulse he unit.

here are many who might argue that necessity for equal opportunity ef- in the Army is history. Each year, ever, the Army recruits about 140,000 soldiers, all with biases and preju- s. The focus of an equal opportunity lyst must include these new accessions ape a positive climate today and for future Army.

major component of the human goal e objective of fostering wholesome lies and communities. As Gen. Wick- stated in his 1983 White Paper:

> partnership exists between the Army d Army families. The Army's unique ssions, concept of service and life style its members—all affect the nature of s partnership. Toward the goal of build- a strong partnership, the Army re- ins committed to assuring adequate port to families in order to promote llness; to develop a sense of commun- ; and to strengthen the mutually rein- cing bonds between the Army and its ilies.

is philosophy remains wholly accutoday. Gen. Wickham, Secretary of Army John O. Marsh Jr. and Sgt. of the Army Glen E. Morrell remain y committed to it and to goals and tives outlined in both the 1984 "Army y Action Plan" and its 1985 sequel, y Family Action Plan II." Accordthe Army has requested congressional approval of $1.9 billion for the Army family program in fiscal 1986. These expenditures represent a 35 percent increase over fiscal 1985 spending levels. New programs for financial planning assistance and quarters-based child care will be introduced in fiscal 1986, while existing programs, such as child-care center construction and child development, will be significantly expanded.

During a recent visit by Gen. Wickham to Ft. Ord, Calif., he talked to a junior enlisted family about their travels from the East Coast to California. Fully expecting to hear about the housing shortage and high cost of available housing in nearby Monterey, he received a different message, one directed at travel allowances: "Our trip was OK . . . except that we had to sell all our furniture to pay our travel expenses coming across the country."

To alleviate this situation in the future, the Army has made permanent change-of-station (PCS) moves a priority program in fiscal 1986. A special package will provide increases in household goods weight allowances, travel allowances for dependents of junior enlisted soldiers in the continental United States (CONUS), PCS mileage allowances for dependents less than two years of age and temporary lodging in CONUS. The largest group of beneficiaries of these changes, which are targeted where the need is greatest, are the junior enlisted soldiers and their families.

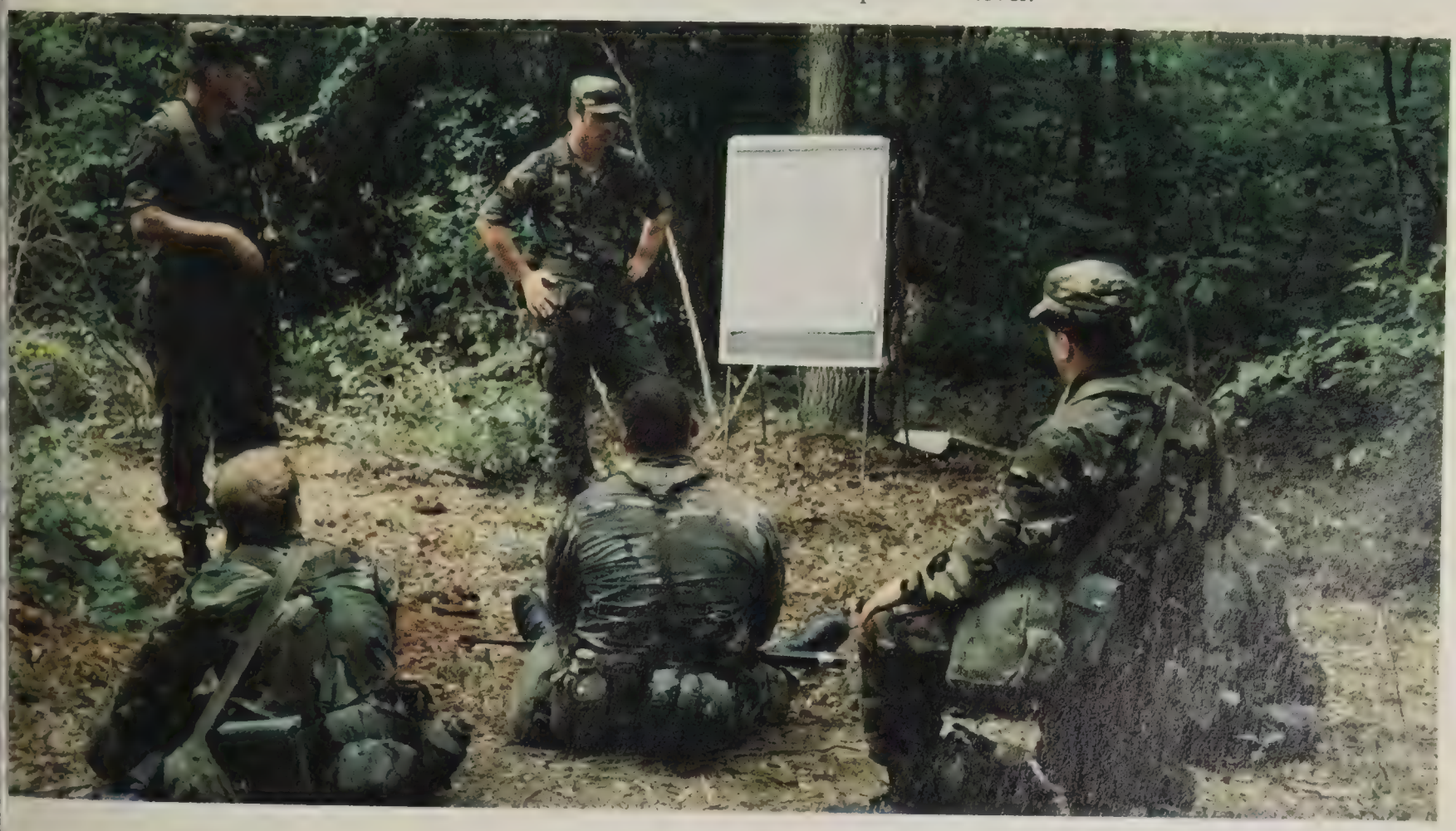
Commanders must include this philosophy and new family initiatives in their climate assessment. More important, commanders must genuinely believe in the role of family programs and include them in their "vision." Recently, a young soldier's wife commented: "The family programs from the Department of the Army sound great, General, but unless my husband's company commander cares, it won't happen!"

The S1, along with other members of the personnel team at community level, must work as the catalysts between family members and the commander to promote a strong Army-family partnership.

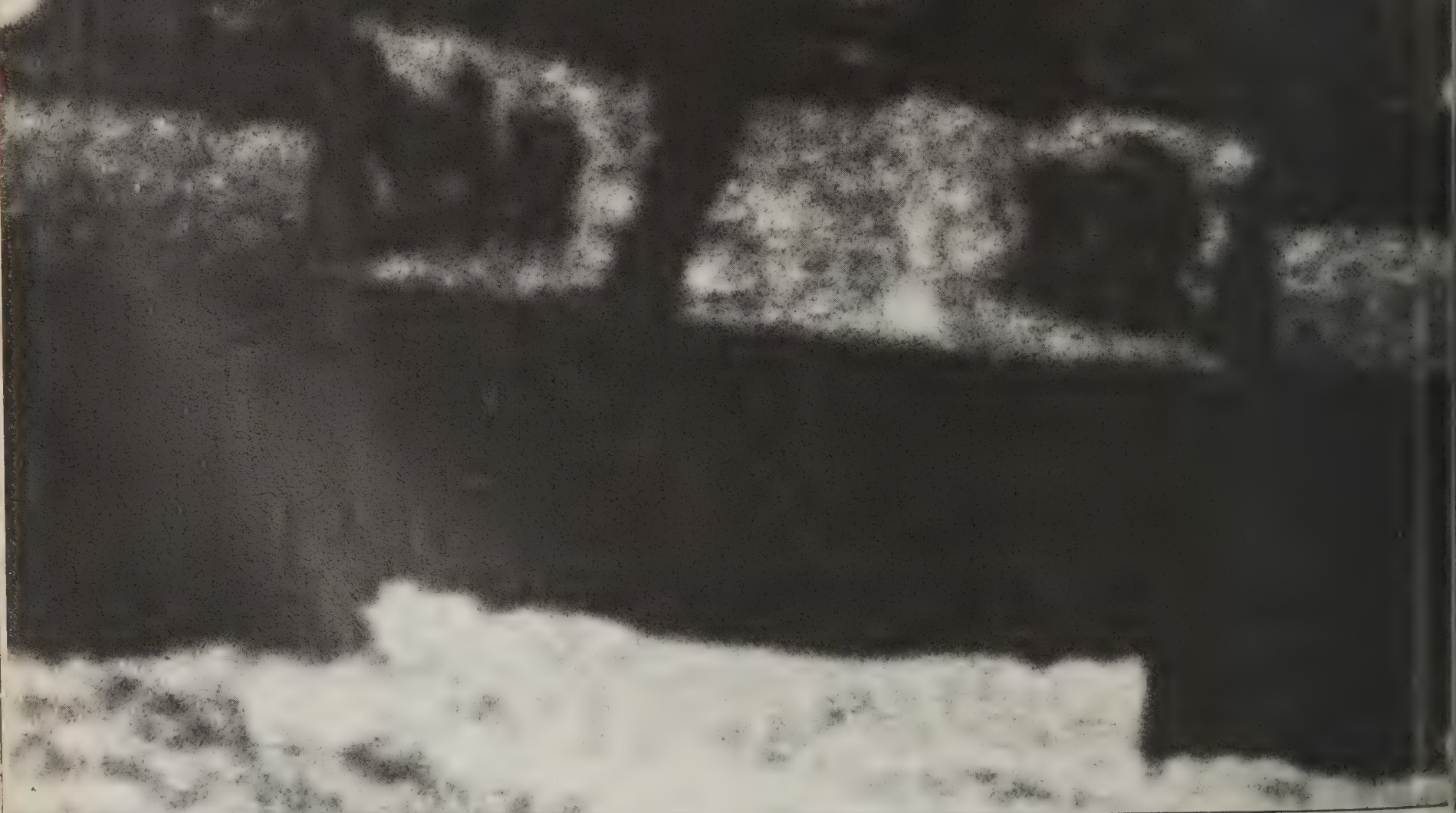
Our analysis of the deployment to Grenada in 1983 included an evaluation of the impact of stress Army families experience during separation. The military unit served as a link between family and soldier.

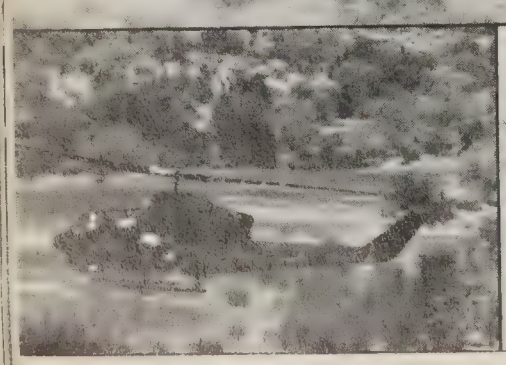
Informal support systems and family support groups provided the communication and support during the soldiers' absence. These voluntary wives' communication networks, established prior to deployment, served as the catalyst to continue a positive command climate at the installation for family members during the units' deployment.

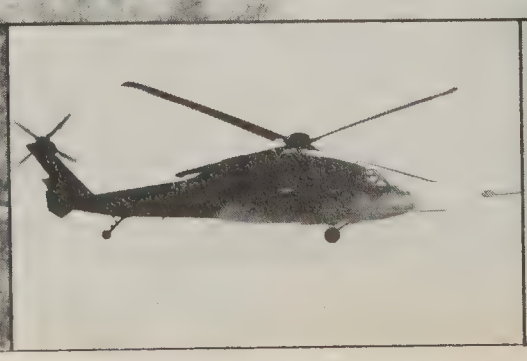
Accident prevention is a command responsibility. Sustained success in this area depends upon the commitment and involvement of commanders and supervisors. All accidents are not preventable, but an accident-free record is the only acceptable goal for Army leaders at any level.

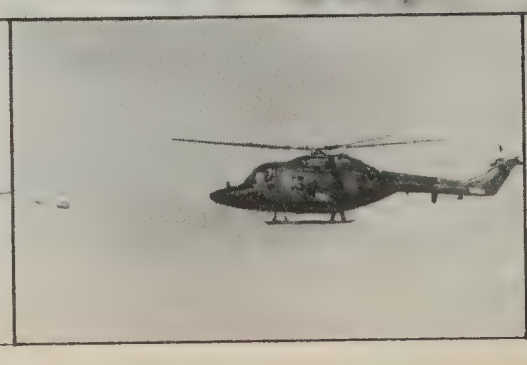


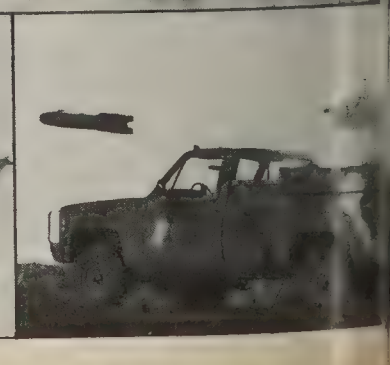
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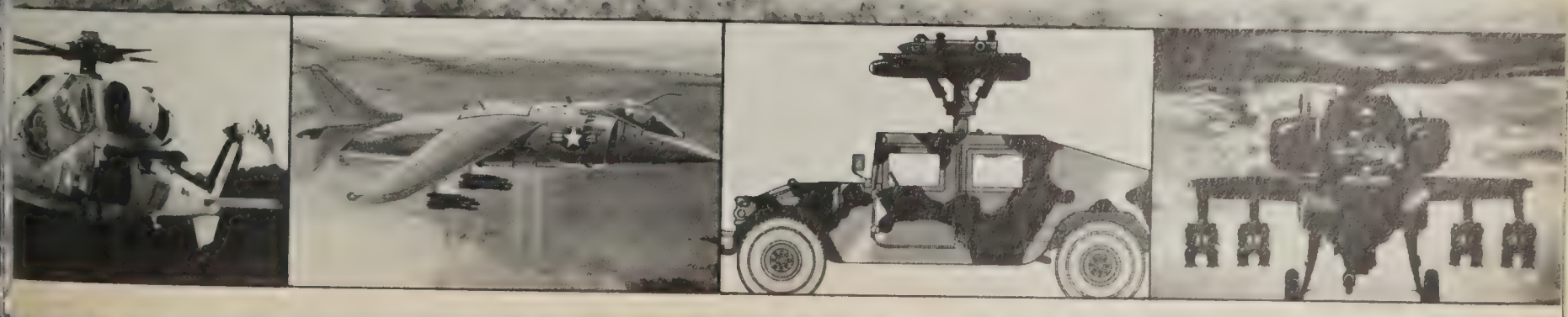
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Safety leadership is no different from any other kind. The commander who really believes in safety will insist that subordinates share this attitude. When your soldiers talk safety and commanders at all levels emphasize it continuously, you know your program is credible.

Over a recent 12-month period, Army accidents killed 503 soldiers and civilian workers and injured another 17,193. The total dollar cost exceeded $195 million. Over the past 20 years, 16,000 Army soldiers have been killed in accidents (excluding Vietnam). This amounts to about 25 infantry battalions.

The associated equipment losses cost $5.8 billion, an amount that would equip 12 armor battalions with Abrams tanks ($1.3 billion); equip 4 battalions with Bradley fighting vehicles ($0.4 billion); equip 11 attack companies with Apache helicopters ($2.7 billion); and equip 16 assault companies with UH-60 Black Hawk helicopters ($1.2 billion).

From a combat readiness standpoint, accidents are a waste the Army simply cannot afford.

Commanders are the key to safe, realistic training. Without command support, no safety program can be successful. According to Gen. Wickham in his guidance to commanders: "Your command's accident rate is a valid measure of your willingness to accept substandard performance."

The leadership goal was added as an Army objective in 1981 and was described thus: "A Total Army whose leaders at all levels possess the highest ethical and professional standards committed to mission accomplishment and the well-being of subordinates."

In his February 1985 White Paper, Gen. Wickham concludes by describing the relationship between caring leadership and the command climate:

> Caring means fostering a command climate whose people are challenged, where they feel their contributions make a difference, and where they feel good about themselves and the Army they serve. Caring and leading go together. You can't have one without the other!

An extraordinary responsibility is placed on the shoulders of our leaders because we must capitalize on the great reservoir of quality entrusted to our care. The quality of our soldiers is at an all-time high. Because our accessions are volunteers, they enter the Army with a positive outlook to fulfill their dreams and to "be all they can be."

The command climate is not limited to the human dimension (leadership, quality of life, equal opportunity, safety, or drugs and alcohol). Commanders must be aware of the impact of personnel management programs on the morale of soldiers and the command climate. Commanders must understand the role of promotion, reenlistment and reclassification policies affecting the command climate.



Photo: L. James Binder

The Army has been working consistently to solve critical NCO shortages. In 1974, we had a shortage of 65,000 in the top five enlisted grades. Last year, we closed the gap for the first time in ten years. Now that we have the correct number of noncommissioned officers, our goal is to balance and align the force by MOS and grade.

Our program to correct MOS imbalances is "Force Alignment Plan I" (FAP I) 85-86. The objective of FAP I is to reduce NCO imbalances (at MOS and grade level of detail) from the 29,000 overages and shortages in grades E5 to E9 at the beginning of fiscal 1985 to the lowest practicable levels. This plan is not only good for the Army, but it is also good for soldiers because if the MOSs are balanced at each grade level, opportunities for promotion are excellent.

Using the major alignment policies governing accessions, promotions, reclassifications and reenlistments, the personnel family focuses, fine tunes and synchronizes policies needed to reduce imbalances. In instances where existing grade structures are not self-sustaining or ... infeasible, Training and Doctrine Command (TRADOC) proponents will char... the grades, where possible.

Improvement has been made in ... major alignment tools in fiscal 1985. ... cordingly, MOS imbalances have b... reduced from 29,000 to about 20,000 ... June 1985. Continued improvement ... only be made with the help of comma... ers, MOS proponents and the person... family in the field. Commanders m... understand the program impact on p... motion, reenlistment and reclassificat... policies and counsel their soldiers ab... career decisions impacting on individ... welfare and needs of the Army. TR... DOC proponents will initiate MOS ... grade restructuring in selected MOSs ... which infeasible structures exist.

S1s must be the principal advisers ... their commanders in the areas noted abo... They must inform their commanders ab... MOS shortages Army-wide and enco... age them to place highly qualified ... diers on promotion standing lists to ... and E6 as soon as they are eligible in ... secondary zone.

A successful FAP I in fiscal 1985 ... will be good for the Army because it ... bring inventories in line with author... tions. It also will be good for sold... because it will reduce overages and p... vide equitable promotion opportun... in all MOSs.



Physical training has become very important in an Army whose limited size requires a high percentage of its soldiers to be ready to deploy worldwide and perform taxing field duties.

addition to balancing the inventory us the authorizations by grade and Army policy must focus on the qual- evel of our future noncommissioned er force. The high quality of our new ssions demands commensurate quality their officer and noncommissioned er leadership.

uring the past year, our midterm reenlistment criteria have required these soldiers to meet specific lards on aptitude test (AT) scores or qualification test (SQT) scores. Re- g that outstanding soldiers have the tial for self-improvement, command- nthusiastically supported the basic education program (BSEP).

ure retention policy will focus on ment of reenlistment and promotion ia. Our current policies allow a sol- o be promoted who may be ineligi- or reenlistment and continued ser- -a dichotomy that is tough for com- ers to articulate and is a negative ibutor to command climate.

e physical ability of soldiers to per- the full range of their MOS on spe- duties worldwide and under field tions is an important measure of nnel readiness. As our Army en- s its fighting capability within a rained end strength of 780,800, this of soldier deployability becomes more critical.

In 1984, approximately 25,000 soldiers had physical profiles at Level Three, according to our personnel data base. Field surveys indicated this number could have been 50 percent higher.

For many years, physical profiles have had a direct impact on the command climate throughout the Army. There was even an unofficial Army term for some of these profiles—"hip pocket." The abuse of a legitimate system by some soldiers cast a negative view by the Army toward all soldiers with physical profiles. In fact, many soldiers with physical profiles were deployable and performed in an outstanding manner.

The system fix was empowering the General Court Martial Authority (GCMA) to determine soldier deployability. Accordingly, the physical performance evaluation system (PPES) became official in July 1984, as implemented by Army Regulation 600-60. The PPES authorized the local GCMA to establish MOS medical retention boards (MMRB) and required a mandatory evaluation of all active-duty soldiers with a P3 or P4 physical profile by the MMRB.

The new evaluation system protects the rights of the soldiers while considering the needs of the Army. Soldiers determined by the GCMA as not qualified to meet the physical demands of their MOS or specialty code in a worldwide environment under field conditions, if not reclassified, are referred for further evaluation to the Army's physical disability system.



Photo: Frederick Sutter

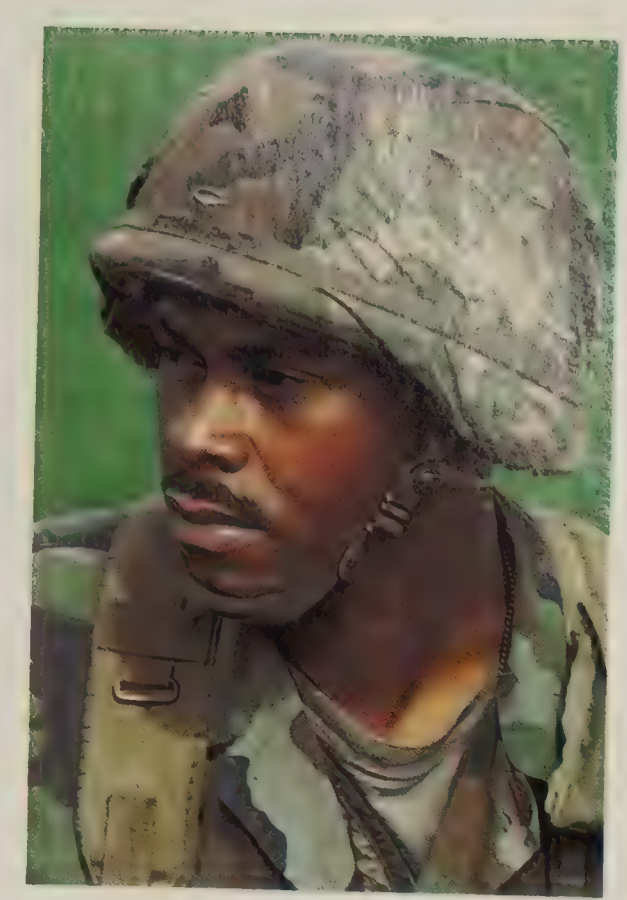


Photo: L. James Binder

The importance of command climate in our Army is as great today as it was 50 years ago when Gen. Douglas MacArthur included it in his annual report as Army chief of staff.

> It will quickly wither and die if soldiers come to believe themselves the victims of . . . ignorance, personal ambition, or ineptitude on the part of their leaders.

Today, our challenge is to understand how we can shape the climate through vision and our unique communication styles. As leaders, we must cultivate the climate in our "Army of Excellence." It is through the command climate that we can provide our soldiers a way of life representative of that in "main street, U.S.A."—one in which each soldier feels that a sense of fairness, justice and equity exists.

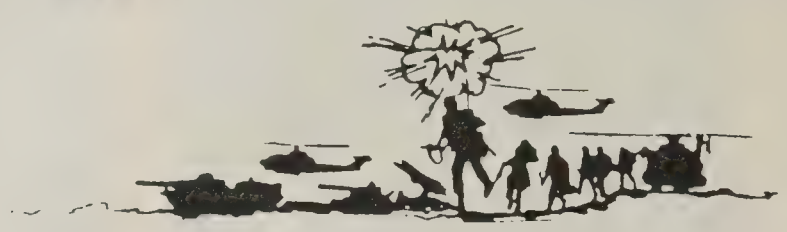
The health of the command climate depends upon the total personnel family. In the units, it is the S1, with assistance from the personnel family, who helps the commander shape the command climate in the areas of discipline, drug and alcohol abuse, equal opportunity, quality of life, safety, leadership and personnel management.

As we develop our leadership programs, the link between commander input and climate becomes evident. A positive, caring command climate demands that commanders use the personnel family to help them. The final measure of leadership input is success on the future battlefield.

Today, it is our soldiers' and families' commitment to the Army, shared dreams and goals—the "we" and "ours."

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—Hanson W. Baldwin, *The Army Combat Forces Journal,* January 1956

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—COL T.N. Dupuy, *The Crux is Land Power,* ARMY Magazine, April 1983

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Army logisticians look to more efficient machines, innovative organization and realistic training to offset manpower limitations at a time when they are severely challenged by the often conflicting goals of readiness and modernization.

Making the System Work

Key to Logistics Success: Leadership and Technology

By Lt. Gen. Benjamin F. Register Jr.
Deputy Chief of Staff for Logistics

It has been said, "Logistics is the art of moving armies and keeping them supplied." These words place into perspective the logistics challenges facing every leader in the Army today. In fact, logistics must be viewed as a continuum that extends from the factory to the foxhole. This continuum is made up of a series of mutually dependent and interconnected systems that must properly interface to give us maximum tactical flexibility and use of our logistics resources.

Today's leaders must take the initiative to enhance the combat and logistics force through the use of technology. We must ensure that this technology is applied throughout the Army, providing our soldiers with the tools to do business in a smarter, better and more productive manner. The future of the Army relies heavily on the application of technology that will result in enhanced productivity.

This article highlights the major thrusts for the Office of the Deputy Chief of Staff for Logistics (ODCSLOG) effort in the coming months. These efforts indicate the direction of logistics today and tomorrow.

It is a fundamental tenet that logisticians must be proactive. Simply stated, we must take the lead to improve the efficiency of our operations. While there are numerous benefits to this approach, one significant gain is to give the American citizen the maximum return for investment in the Army.

The newly established ODCSLOG directorate for contracting and production with its office of the Competition Advocate General (CAG) of the Army is a first-rate example of this approach. The directorate consists of two staff divisions and the U.S. Army Contracting Support Agency. It is responsible for managing the contracting functions of the Army, as well as increasing competition in the procurement process.

The directorate reviews the annual expenditure of $30 billion executed in four million individual contract actions. It supports all facets of contracting; provides guidance, direction and assistance to 26 contracting activities and 240 purchasing contracting offices; and enables Headquarters, Department of the Army, to develop management information systems, policies and procedures that ensure effective and efficient contracting operations.

The elimination of barriers to competition is a related program that has given the Army additional challenges. We cannot accept less than full and open competition in our procurement process. To foster this belief, the Army has appointed a Competition Advocate General of the Army. The Army has a longstanding policy that goods and services shall be acquired by competition, and the CAG will foster and shepherd that philosophy. Accordingly, each buying command has also appointed a competition advocate, and they must be given the strongest support.

To reduce the barriers to competition, we monitor four key areas of conc (1) overly restrictive specifications, lack of technical data, (3) assurance competition in programs before they circumscribed by limiting specificati schedules and funding and (4) "br out"—introduction of competition in isting sole-source procurement progran and competition in the purchase of m subassemblies.

In cooperation with defense indust the competition advocate will cont to foster a full and open competition gram. We must maximize competitio we are to exercise a degree of leader in the stewardship of Army resourc

Another key element in the manage ment of resources is the controlled redistribution of supplies and equipment. The "retention and transfer enhancement" (RATE) plan is a logistics management initiative designed to preclude the wasteful disposal of usable materiel. Under this plan, all serviceable supplies, equip ment and unserviceable items repai able at the direct-support, general-su port or depot level are prohibited fr transfer to property disposal activiti

Another feature of RATE directs excess repair parts and installation p erty be matched against Total Arm quirements before any disposal acti executed. Items requiring depot repa well as excess serviceable repair parts being returned for repair and cont



Army maintenance philosophy dictates that field repairs be made as far forward as possible: soldiers of the 3rd Armored Division's 3rd Battalion, 32nd Armor, remove the engine from an M60A3 tank during the 1985 NATO winter exercise 'Central Guardian.'

Leadership involvement in this process has been and continues to be excellent. In 1986, property disposal operations are again expected to improve when all policies on materiel returns and excess management issues are consolidated into one publication. The bottom line is that the Army is providing for better management of its resources.

The Army continues to execute an aggressive energy management program with the overall objective of conserving energy while concurrently maintaining force readiness and the quality of life for soldiers and their families. The Army is projected to meet the presidentially assigned goal of 20 percent reduction of energy per square foot used at installations by fiscal 1985, based on the fiscal 1975 level of consumption. Our energy objectives have been and will continue to be met through command support energy conservation improvement initiatives and an active awareness program.

In last year's *Green Book*, we commented on "reshaping the logistics force" (Reshape). In view of the progress since then, it is appropriate to furnish an update. A detailed review of the structure of logistics units with a view to enhancing productivity through better design and use of technology is continuing. The direction is to change unit design from manpower-intensive to equipment-intensive, with a focus on commercial equipment.

In addition to manpower savings, commercial equipment provides immediate capabilities at reduced cost and time. For example, keying on requirements for the addition of new cranes, vehicles and forklifts has reduced the requirement for the number of terminal transfer companies. Analysis also identified the potential for manpower savings in other combat service support (CSS) functional areas, such as highway transportation, supply and ammunition. Current planning and funding point to a phased improvement in unit structure.

Another important element of logistics stewardship is that of assessing civilian strength requirements. To remain consistent in both military and civilian end strength actions, the Army chief of staff has directed expansion of the productivity enhancement analysis in part to those logistical functional areas staffed by civilian personnel.

This issue is being attacked through a newly formed civilian manpower end strength study group under the direction of the ODCSLOG. This group, chartered to determine the nature, character and cause of growth in civilian end strength through 1991, intends to fulfill its obligations by a worldwide analysis of all civilian manpower employed in support of active and reserve components. The study is expected to identify potential high-payoff productivity enhancements, as well as areas for potential savings in civilian manpower. We view the civilian manpower study as a complementing product of our continuing Reshape initiative.

The European support structure study, also under the direction of the ODCSLOG, is assigned to identify, evaluate and recommend methods of realigning support structure in Europe to improve combat capabilities, while minimizing the requirement for support spaces, and to improve overall effectiveness. No small task, this highly coordinated effort involves brainstorming support structure issues to shape a more effective and streamlined support base. This study is also corollary to the Reshape effort.

Several ODCSLOG programs have been formulated to capitalize and institutionalize distribution/redistribution of equipment. These programs are proving cost effective and are meeting the objective of



near-term improvements for force re
ness. The first effort, the equipment re
ness code-A (primary weapons and eq
ment) (ERC-A) project, is one of th
keys to improving near-term readines
active units. This project is an Ar
wide, detailed look at the readiness st
of equipment in units, with emphasis
fixing specific equipment shortfalls.
ERC-A project's philosophy is "the
to fight is the first to be fixed."

Active force and reserve compon
units worldwide have been identifie
intensive equipment review. Throug
tensive management of the distribu
function, we have realized significant
provement in the readiness status of
force. This project also addresses ec
ment deficiencies in progressively l
deploying units.

Tactical mobility is another fundam
tal issue in the distribution/redistribu
arena. The amount and mixture of eq
ment required to accomplish the tac
mobility mission is an issue that the A
is attacking on two fronts.

To define the requirement for mod
ized transportation equipment, the A
conducted a zero-based study of tac
wheeled vehicle requirements to c
mine the mixture of light, medium
heavy trucks that best met the Ar
tactical transportation requirements.
curement programs for high-mobility
tipurpose wheeled vehicles (HMM
and commercial utility and cargo ve
(CUCV) are two major advances i
modernization of the Army's tactica
hicle fleet.

Funding constraints do not permi
ficient quantities of new vehicles
fielded to offset readiness and tran
tation shortages; however, the "ligh
tical wheeled vehicle redistribution
egy," which will upgrade readiness i
near term, has been developed.



LT. GEN. BENJAMIN F. REGISTER JR. became the deputy chief of staff for logistics in July 1984, after serving as deputy director of the Defense Logistics Agency. He served in the Korean War after being commissioned from the ROTC in 1951. He holds a bachelor's degree from the Georgia Institute of Technology and a master's degree from the Air Force Institute of Technology, and attended the Industrial College of the Armed Forces. Recent duty assignments include command of the 2nd Support Command (Corps), U.S. Army, Europe; director of materiel management, Army Materiel Command; and command of the Army Armament, Munitions and Chemical Command at Rock Island, Ill. Earlier assignments included being chief of the Plans and Projects Division, General Supply Directorate, 1st Logistical Command, Vietnam; director of procurement and production, Army Missile Research and Development Command; and commander of the Mainz Army Depot, U.S. Army, Europe.



Two weapons-carrier versions of the HMMWV (high-mobility, multipurpose wheeled vehicle) negotiate a desert track: the Army is buying thousands of these 1¼-ton vehicles in a long-overdue modernization of its truck fleet.

This strategy calls for a one-time redis-
ution of current light tactical wheeled
icles to fill shortages in units and war
erve and prepositioned stocks. Using
light tactical wheeled vehicle redis-
ution strategy in combination with
MWV and CUCV procurement pro-
ms, we maximize the use of existing
ts as well as modernize the force.
Within the ODCSLOG, the individual
partment of the Army logistics sup-
t officer (DALSO) monitors and as-
es the Army's efforts in fielding com-
e systems. The DALSO's efforts in-
le a consideration of the multitude of
stics support functions inherent in
ems fielding, such as repair parts,
ning, personnel, publications, ammu-
on, the support concept and facilities,
well as tools and test equipment.
he DALSO also must ensure the sup-
portability and sustainability of Army materiel throughout its life cycle, coordinate system logistics to integrate new systems into the Army force structure and serve as the ODCSLOG focal point for monitoring and managing specific systems.

The DALSO is dedicated to easing the transition during this period of major equipment modernization. By identification of problems well before the system is fielded, planning is enhanced, and countless hours in problem resolution are saved.

Another significant action ongoing in the distribution process is the proactive use of the Total Army equipment distribution program (TAEDP). This effort ensures that equipment distribution equals authorization documentation and eliminates the "instant unreadiness" problem associated with modernizing the force.

A distribution system accurate down to the detail of line item numbers and unit identification codes has been developed for automation. In short, the TAEDP will permit us to distribute equipment to those units needing it most and follow the distribution process to completion, ensuring that designated units actually receive the item.

ODCSLOG has been working toward the goal of institutionalizing logistics research and development (LOG R&D) as part of the Headquarters, Department of the Army planning, programming, budgeting and execution system.

During 1985, research and development processes were expanded to make LOG R&D that portion of the research, development, test and evaluation (RDT&E) which applies science and technology to solve generic logistics support system deficiencies. LOG R&D seeks to reduce logistics-related weapons support costs through improving productivity, reducing equipment downtime, streamlining maintenance support structure, reducing quantities of supplies required and stocked and reducing associated dollar costs.

Also, LOG R&D is being directed toward those areas that create high operation and support costs for Army systems. The program applies logistics technologies and operates through existing funding and approval channels. It encompasses concepts, procedures, techniques and technological approaches.

Materiel handling equipment (MHE) is one of many areas for potential application of science and technology. LOG R&D, in this case, will be used to demonstrate robotic MHE technology with the long-range thrust of enhancing logistics support. Weight reduction, packaging



The Army uses suitable commercial-type equipment wherever possible in its logistics operations such as this 50,000-pound rough-terrain container handler, in which a special lift mast is fitted to a standard Caterpillar 988B wheeled loader.

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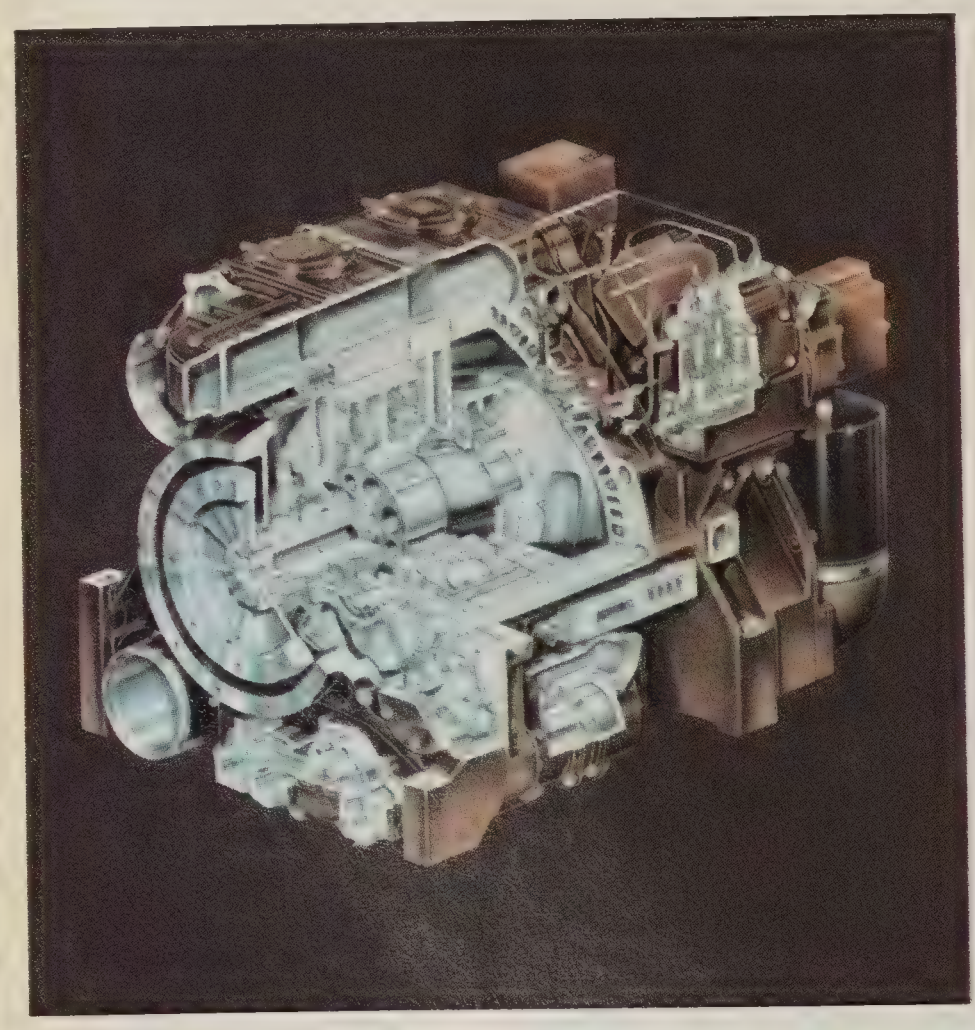
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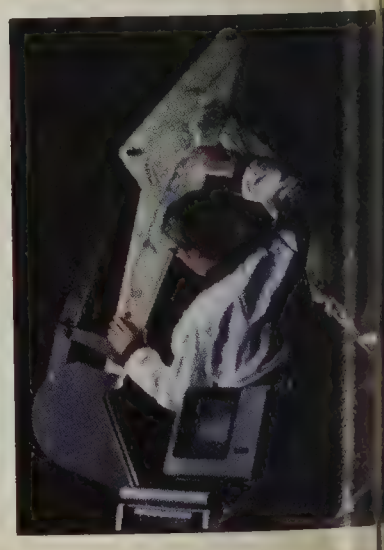
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technology, rearming and refueling systems applications and improved maintenance concepts are being explored.

Other potentials for high payoff are in the area of diagnostics and prognostics. An example of these is the development of a materiel and conceptual approach to aircraft maintenance which identifies system performance degradation early enough to safely terminate flight and accomplish necessary repairs. The concept is called "predictive aircraft maintenance system" (PAMS). The heart of the hardware involved in PAMS is a flight data recorder and fault analyzer (FDRFA), which will monitor major aircraft systems and critical components such as engine, transmission, hydraulics and rotating power train parts for proper operation. By comparing actual values with programmed values, the FDRFA can detect an impending system failure and display the deficiency and recommendation to the flight crew. The pilot can then take appropriate action before an in-flight mishap occurs.

The FDRFA will also create an electronic record of each flight. This record is entered in the unit maintenance computer, which will enable the maintenance manager to monitor aircraft performance and to predict the need for repair, replacement or adjustment of aircraft components. A crash-survivable memory will save selected data for postmishap investigation. Installation of standard flight data recorders into five Black Hawk helicopters and two Apaches in fiscal 1986 is a milestone in this long-range program.

An important part of the Army's LOG R&D effort is in automation. Great changes are taking place to bring the benefits of computer technology to unit level and provide more responsive logistics support. For example, the "unit-level computer" is a state-of-the-art microcomputer that puts computer power into the hands of logistics personnel at the lowest level. Key new hardware systems—the tactical Army combat service support computer system and corps/theater automatic data processing service center computer with new logistics software, such as the standard Army retail supply system and standard Army maintenance system—will replace outmoded existing systems at division and corps level with smaller but more powerful computers.

In the continental U.S. support base, "Viable" regional data centers now provide the backbone of automated logistics support to installations. The prime efforts here are to redesign logistics software to take advantage of existing Viable hard-



ware systems. The goal is to make logistics automated systems user friendly and interactive and to develop more effective logistics concepts and doctrine based on the opportunities of interactive logistics data automation networks.

Two of the most exciting logistics automation initiatives now under way are the logistics communications network (LOGNET) and "logistics applications of automated marking and reading symbols" (LOGMARS).

LOGNET is an automated logistics planning system designed to provide logistics planners with information essential for crisis planning and to supplement manual and automated logistics and force planning systems currently employed in the planning environment.

It provides data on critical items of materiel that may inhibit or constrain operations. Using a force list, LOGNET determines requirements for critical materiel, provides the current stock status and calculates the point in time, in a given scenario, at which these supplies are exhausted.

LOGMARS will implement bar-code symbols throughout the Army. It is expected that bar coding will increase productivity and accuracy in the following areas: depot-level maintenance, ammunition inventory, wholesale receiving, service store inventory, retail receiving, wholesale shipping, distribution sorting, transportation, wholesale inventory and location audits, and property disposal.

These functional areas are only an example of the potential uses of LOGMARS. Further research and investigative efforts are needed to realize the full scope of LOGMARS capability.

Commanders and maintenance supervisors always face the challenge of providing quick, efficient battlefield rep of equipment. To accomplish that n sion, adequate repair parts are an ess tial coefficient in the sustaining supp equation.

The standardized combat prescri load list (PLL) and authorized stock list (ASL) provide the necessary spare meet the commander's requirement. Ur this program, mandatory parts lists (MI are developed which contain repair p to support operational availability of ical equipment under combat conditi The combat PLL/ASL philosophy for MPLs to be incorporated into and ASL and these parts to be used peacetime maintenance operations. M for combat unit PLLs have been publis

Pamphlets consolidating PLL combat support, combat ser support and aviation unit M are now being distributed to the f Prototype MPLs for the combat have been developed and are curre being tested for validation. By the en fiscal 1986, it is expected that PLL M for all applicable units will be fiel Current funding levels will also perm to make major headway in the fiel of combat ASLs.

In addition to repair part managen the forward support maintenance cor has been adopted as the means of porting modern equipment. This doc offers flexible, responsive support w and when combat commanders nee The emphasis is on fault isolation repair by replacement. This maxir the use of built-in test equipment at level and automated test equipme division and corps level.

Repairs that take an extended p of time or are beyond the capabili

ew M1 tanks with boxed sets of uipment await delivery to units: DCSLOG's battle-staff fielding team is dicated to the smooth introduction new equipment.



Prepositioned stocks of armored vehicles in a warehouse in West Germany: four division sets of heavy equipment are kept ready in West Germany and two more are now being assembled in Belgium and The Netherlands.

e forward maintenance team are evac- ted rearward directly to the level of aintenance that has the repair capability. e forward support maintenance doc- ne is designed to provide a return of uipment as far forward as possible, as ickly as possible.

Supply and transportation are equal ments of the equation since preposi- ned supplies, which include preposi- ned material configured to unit sets OMCUS) and war reserve materiel stocks RMS), are force sustainers. Materiel it can be positioned in-theater equates a combat multiplier and eases lift de- nds on strategic transportation systems. RMS can be placed into the hands of rs quickly, demands for strategic trans- tation assets are reduced and deploy- nt requirements for critical combat ts can be better met. Logisticians con- ue to make prepositioning programs aningful contributors to our force ca- ility.

Within ODCSLOG, we have under- en an examination of the complex issue sustaining equipment on the battlefield he future. The focus is on technology, ustrial preparedness, war reserves and istics functional assessment methodol- . When completed, we anticipate this rt will provide a threefold result. irst, we will have formulated an ap- ach to realize the full potential of bat- eld logistics capabilities. Second, we have a key by which to set the prior- s of our evolving efforts between 1985 2000. Third and most important, our lefield sustainment thrusts can be con- ed into long-range planning guidance. he sustainment process also extends the force structure because the Army es heavy reliance on the reserve com- ents (RC) to fill its war-fighting needs for vital CSS functions. This is especially significant in the area of maintenance. Over 80 percent of the Army's nondivisional maintenance companies are assigned to the reserve components.

We must ensure that the RC maintenance force is equipped with the tools and test equipment necessary to maintain newly fielded equipment for the active and RC units that they would be supporting in wartime. The "reserve components transition to modernization" (RC TRANSMOD) is a logistics program that provides funding to RC nondivisional maintenance units for special tools, as well as test, measurement and diagnostic equipment to support this need.

Currently, $54 million is programmed to fund 38 direct- and general-support maintenance units in support of eight selected major weapons systems, such as the M1 tank. Another $64 million has been requested to fund 51 units in support of 14 additional weapons systems.

To provide qualified soldiers for CSS units, several logistics training initiatives are under way. As previously noted, reserve components units make up the bulk of our wartime logistics force structure. New logistics training techniques are aimed at improving soldiers' skills in these units.

One initiative is the regional maintenance training site program. This provides facilities, training devices, component equipment, test sets and special tools to support the Training and Doctrine Command (TRADOC) reserve components hands-on maintenance programs. In addition to normal administrative areas, facilities provide technical libraries, classrooms, training laboratories and maintenance shops.

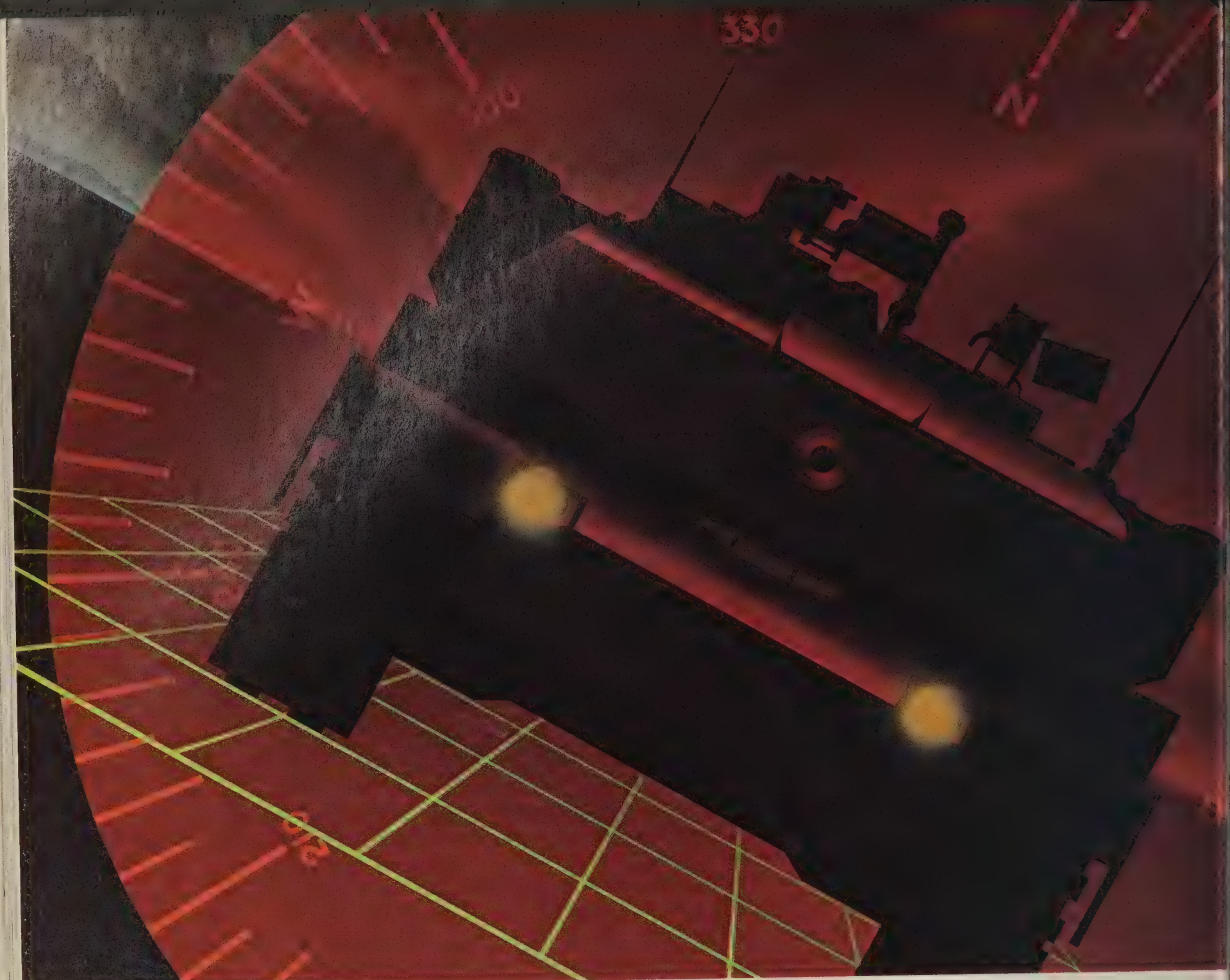
Current programs call for establishment of sites at 21 locations dispersed throughout the United States. Additionally, two high-technology sites are planned for Tobyhanna (Pa.) and Sacramento (Calif.) Army depots to provide annual training support for maintenance skills for electronics and low-density equipment, i.e., that present in the force only in small numbers. Training programs have already been implemented at the Ordnance School and will begin in 1986 at Camp Shelby, Miss., and Ft. Bragg, N.C.

To ensure that unit leadership skills are properly maintained, the Army annually conducts a logistics exercise or LOGEX, which is an unclassified command post exercise designed to train commanders and staff officers in planning and executing tactical and logistical operations.

This year's exercise, LOGEX 85, was conducted at Ft. Pickett, Va., in August. The exercise included host-nation support and the integration of early-deploying RC units. LOGEX 85 was an overwhelming success. Doctrine was exercised, problems were highlighted for TRADOC schools to resolve, knowledge and experience were gained or reinforced by participating units and a greater mutual understanding and cooperation was established between participating services, allies and host-nation organizations.

Another initiative is a new Army approach to logistics training in an exercise environment called "four-tier logistics training strategy," developed by the Army Logistics Center at Ft. Lee, Va. The strategy utilizes a concept for balanced logistics training wherein active and reserve components CSS units receive progressive training over an idealized four-year cycle.

The strategy envisions four separate tiers of exercise training. The first tier



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A Newport-class tank landing ship demonstrates its cargo off-loading capacity during an Army-Navy exercise of over-the-beach logistics procedures.

nsists of training in unit procedures d doctrine at home station. This is con-cted using exportable training packages lored to the needs of the unit.

In the second tier, the RC corps sup-rt command and theater army area mmand units train together to form a hesive CSS element. This level is de-ned to exercise "Capstone" relation-ips (under which RC units are assigned specific overseas commands before bilization) and other real-world oper-onal plans.

In the third tier, RC units meet and ex-ise with their active-duty counter-rts, including the corps- and division-el combat units they will support. Tier-ee exercises focus on specific opera-nal plans. During this phase, units con-ct command post and field training ex-ises using real-world plans.

The fourth tier implements overall doc-ne and serves as the architectural pin-le of CSS training. Although not based operational plans, the goal is realistic ining in real-world procedures for spe-c geographic areas.

To support four-tier training, a plan also been developed by the Army gistics Center to provide automated port to each of the tiers and blend h tier into a cohesive automated pro-m. The key element of this initiative mainframe computer to be located at Lee to enhance exercises through stan-dization, provide exercise mechanics, mit interaction between players and trollers and allow exercise planners namic access to the computer during rcise development.

Ultimately, the total system is designed achieve automated interface among rcise developers and in participants in continental United States. Addition-ally, overseas counterparts will partici-pate, via a satellite link, while remaining at the home station.

To conduct training properly, it is ne-cessary for RC units to have a basic equip-ment package at the home station or at the training site. The minimum essential equipment for training (MEET) program is an Army initiative to ensure that later-deploying RC units train with the essen-tial equipment in the proper quantities.

Under this program, commanders at the unit level identify the top ten items of essential equipment for training that have not been issued to their unit. These lists are then used to raise the priority of issue to those units on the Deparment of the Army master priority list. The pro-gram is currently being institutionalized and is expected to have a positive impact on RC readiness.

Joint cooperation with the other armed services is another major ODCS-LOG thrust to improve Army-wide logistics. We are undertaking efforts to do business better by recognizing that someone else may have built "a better mouse trap." We are calling this thrust "the spirit of jointness."

Recent exercises and military operations have pointed to a need for logistics pro-cedures and techniques for sustaining joint operations. Lessons learned showed that integrated logistics procedures and tech-niques were essential to conduct success-ful joint operations.

The Joint Logistics Techniques and Pro-cedures Board was established in early 1985 to develop, test and recommend joint and combined logistics techniques and procedures. The Joint Chiefs of Staff tasked this board to achieve effectiveness and economy of operations and to prevent or eliminate unnecessary duplication of facil-ities or overlapping functions in a joint or combined operational environment.

The board is examining such diverse issues as nonstandard techniques for fuel-ing and refueling, contracting in a theater of operations, common item supply and ammunition support. We are convinced that the board will offer an excellent for-um for formulating logistics procedures.

There are two other fertile areas of joint service cooperation that are enhanc-ing logistics activities. In 1984, a memo-randum of agreement (MOA) on joint strategic mobility program and develop-ment coordination was signed between the Army DCSLOG and the deputy chief of naval operations for logistics. This MOA expands a 1982 effort into a broad range of mutual strategic mobility issues. The overall objective is to achieve a bal-anced program which ensures a smooth flow of materiel to support combat forces worldwide.

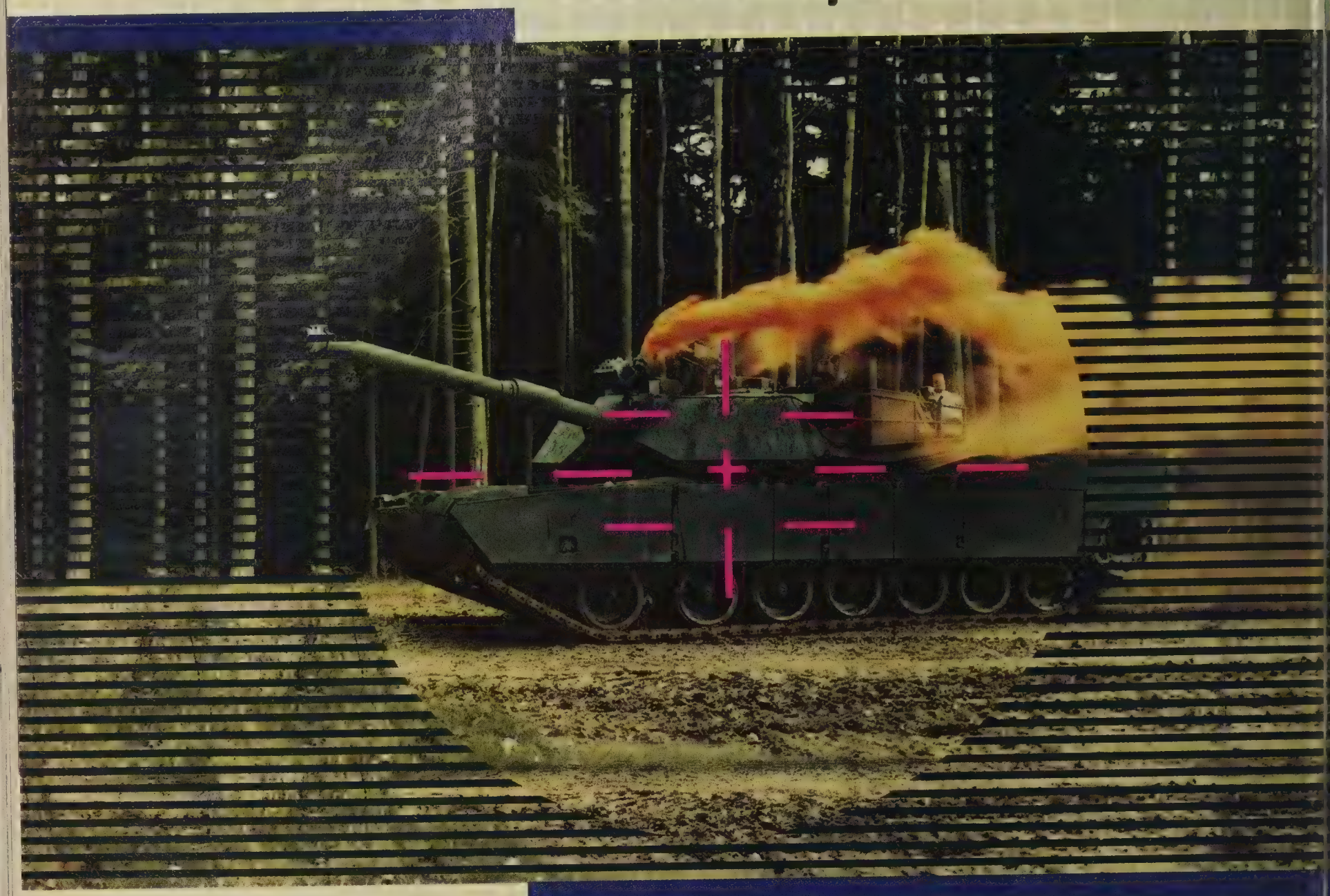
A portion of this effort involved the joint logistics over-the-shore (JLOTS) II test series, completed in the fall of 1984. This event provided the opportunity to test Army–Navy joint procurement pro-grams. Operational test reports on the deployment, roll-on/roll-off and through-put phases of the test have been published.

Army and Navy programmers are cur-rently reviewing the results and, in con-junction with the acquisition community, are making adjustments to each service's program. The goal is to ensure that Army and Navy programs are balanced, com-plementary and mutually supportable. One without the other will not satisfy global deployment and sustainability re-quirements.

The second area is coordination be-tween the Army and Air Force staff in airlift requirements, design and program development. This is a fine example of the current trend toward cross-service program coordination.

This approach was formalized when the chiefs of staff of the Army and Air Force signed a MOA on joint force de-velopment. This MOA culminated a six-month joint study effort by the two ser-vices to develop a plan to design and field the most effective, affordable sys-tems in support of airland combat op-erations. Based on the Army–Air Force MOA, the services agreed to cooperate in the development of joint airlift con-cepts and doctrine. To implement this initiative, the joint Airlift Concepts and Requirements Agency (ACRA) was estab-lished. The ACRA is providing qualita-

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. . . are sown the seeds that upon other fields, on other days wil bear the fruits of victory!" — *General Douglas MacArthu*

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WESTON SIMFIR

e input to the ongoing worldwide in-
itheater mobility study.

The Army also plays an integral role
equipping and sustaining allies and
endly foreign countries. Due to the
ghly sensitive nature of foreign military
es, an innovative, high-performance
ganization is required. This team is
arged with the stewardship of a $4 bil-
n a year program.

While providing quality products in a timely manner, it is also required to maintain the secu-
y of critical U.S. military technology.
story has proved that these programs
nance not only U.S. security, but that
the rest of the free world as well. This
ar an Army-led tri-service task force
:omplished a major review of the for-
n military sales process, making it
re easily understood and responsive.
Logistics leadership is not complete
hout mentioning the Army family.



Trucks queue up for loading on the beach at Ft. Story, Va., during the 1984 Army-Navy JLOTS II (joint logistics over-the-shore) tests.

e of our most important objectives is
provide quality services for the soldier
his family.

everal initiatives have recently been
roved that benefit the Army family.
iatives in the transportation arena in-
le extended space-available travel priv-
es for student dependents, simplifica-
of customs declarations for Military
ift Command charters to the conti-
tal United States, increases in ship-
allowances for soldiers in pay grades
through E4 who have two years ser-
or less and a family furlough fare
a commercial airline.

he Army commissary system remains
of the soldier's most significant bene-
The Army operates 141 commissary
es with 38 annexes worldwide, and
e employ approximately 10,000 per-
nel. From recent survey data, commis-saries are perceived to be the most important benefit to the soldier, next to medical care. Commissary sales of approximately $1.6 billion in fiscal 1984 support this conclusion.

Over the years, commissary operations and facilities have undergone extensive change. Improving levels of service for military patrons and their families is a primary mission of the Army commissary, and operational changes within the commissary system will result in continued improvements.

Construction costs for new commissaries are paid out of a trust fund derived from the surcharge paid by commissary patrons. There are 37 funded construction projects for improved commissary facilities programmed through fiscal 1991. These projects will not only provide modern facilities but will also make shopping easier and enable commissary staffs to offer more efficient service.

Commissary operating hours are periodically reviewed by installation commissary advisory councils to ensure that customers are able to shop at the most convenient times. Expansion of operating hours also helps alleviate overcrowded conditions which occur in many of our commissaries. Commissaries on post with large troop populations were the first to expand hours. Several stores in the United States have gone from five-day to six-day operations, and additional part-time civilian work years have been added to the budget to expand operating hours in selected commissaries for the convenience of military shoppers and their families.

The Army strives to improve support to the soldier and take advantage of the latest technological advances in food science and equipment. The Army has approved implementation of the combat field feeding system, in which field kitchens are consolidated where feasible and new, modern mobile field equipment is utilized. The new tray ration (a ready, prepared, canned ration that is heated in hot water, opened and served) is being fielded.

A clothing and individual equipment system has been initiated that will ensure items are developed using the latest technology and placed in the hands of the soldier as rapidly as possible. Examples of growing technology use are the Kevlar helmet and the extended-cold-weather clothing system (ECWCS). The helmet is made of special layered plastic and man-made fibers, which together are more effective than steel. It was worn by soldiers in Grenada and proved it saves lives in combat. The outergarments of the ECWCS system are made of a semipermeable layer of Teflon, which repels water and breathes.

These systems exemplify the Army's commitment to improving the soldier's comfort, sustainability and survivability.

We must reduce the total weight a soldier must carry. A number of systems have been identified that will be multifunctional and lightweight and reduce the soldier's load both in number of items to be carried and the individual weight. Examples are the new combat boot, lightweight battle dress uniform and new lightweight rations.

Words such as initiatives, programs, systems, equipment and technology have been used throughout the article to describe those functions of the logistics world where we continue an aggressively proactive role to enhance the overall productivity of the force. Army logisticians are finding smarter and better ways to do business by upgrading facilities; improving work flow, techniques and procedures; increasing combat capability; and giving taxpayers the maximum return for their investment in America's future.

To be successful, however, these logistics thrusts must always take people into account. Logistics involves more than processing requisitions or operating equipment. It means caring for soldiers by providing proper leadership, equipment, clothing, shelter and food. It means training subordinates to exercise care and wisdom in using resources. It means maintaining equipment in a constant state of readiness.

Most of all, logistics means leading in the sense of making the system work. Leadership and stewardship are the keys to the success of logistics to support the present and future force.

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The French Army assault weapon



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Ergonomy adapted for full operational response

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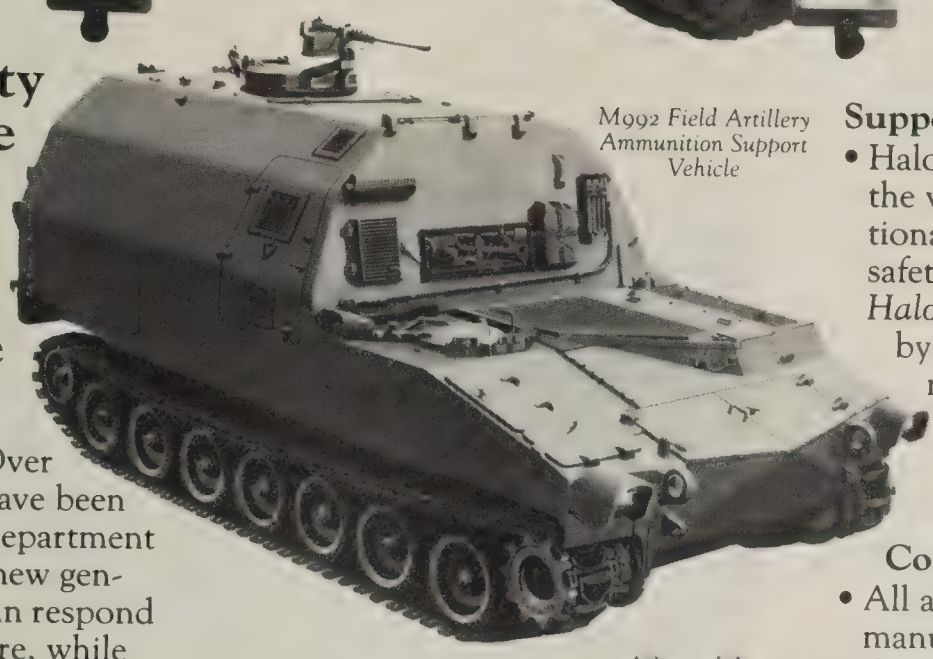
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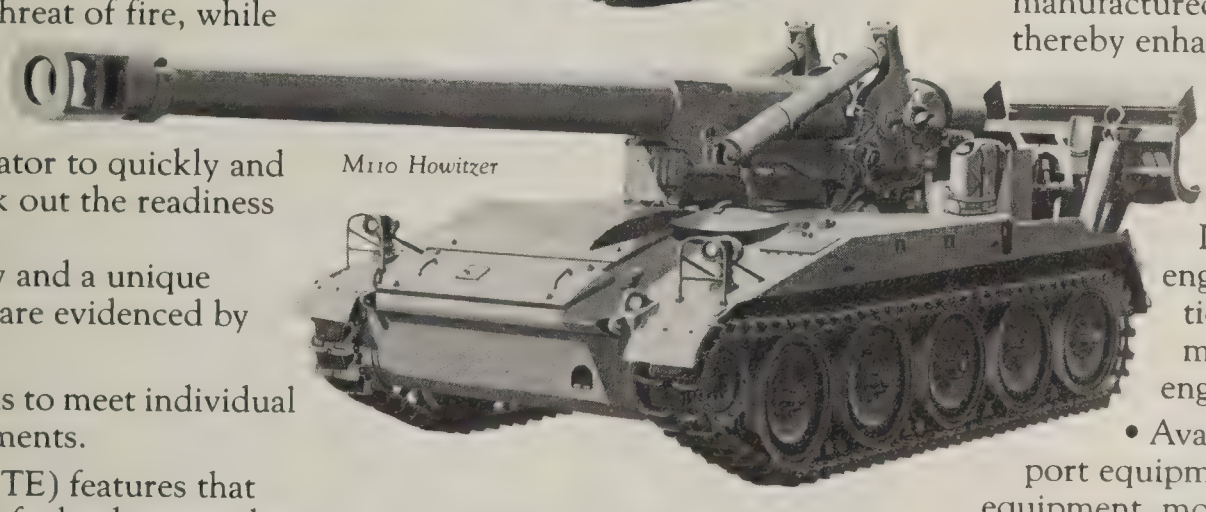
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M109 Howitzer



M992 Field Artillery Ammunition Support Vehicle



M110 Howitzer

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- Built-in-test (BITE) features that instantly isolate faults down to the assembly level.
- Discriminating crew compartment infrared sensors that distinguish between antitank rounds that start fuel fires from those that do not.
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In Army's RDA Community

Soldier-First Attitude Has 'New Prominence'

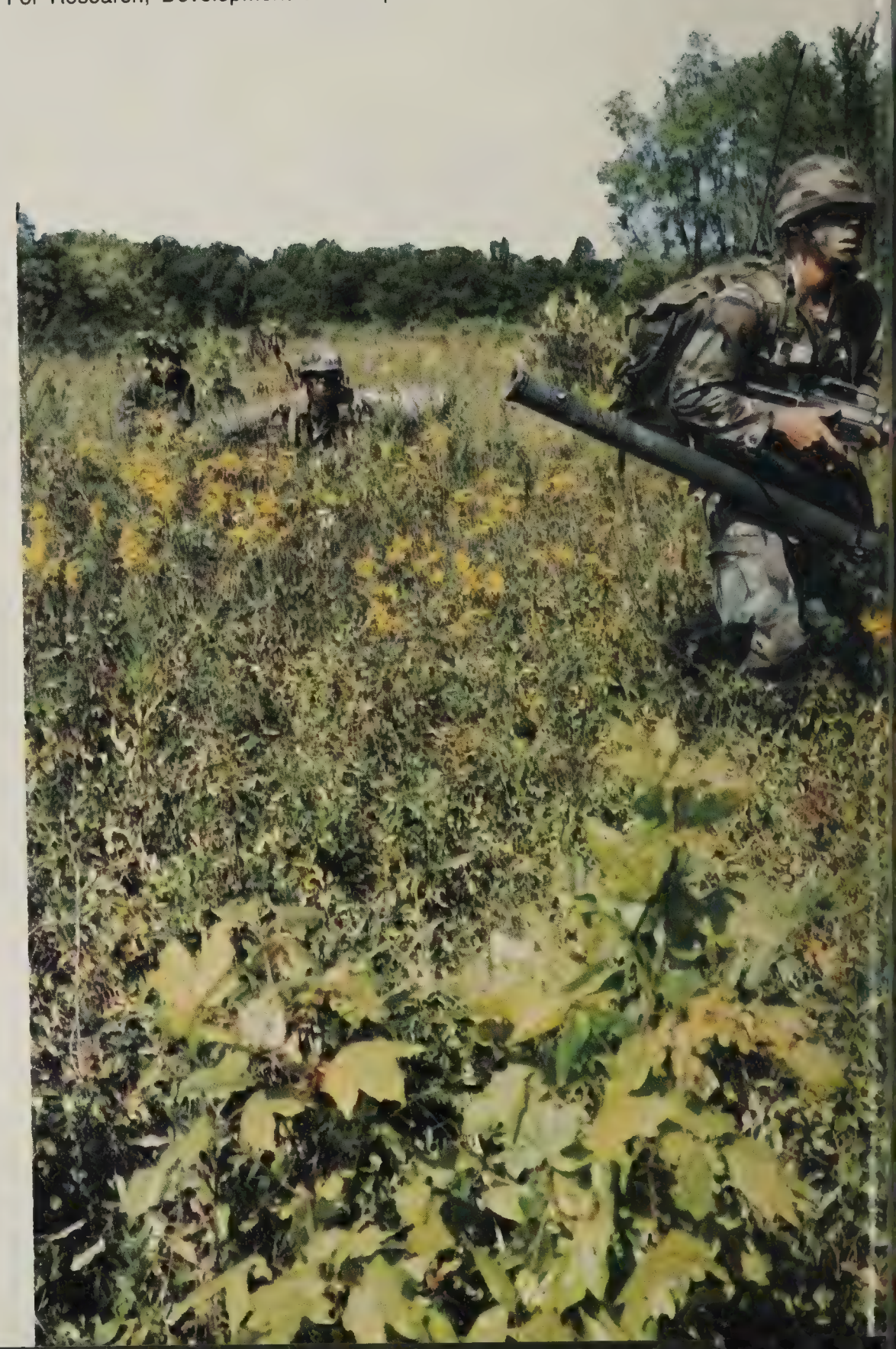
By Lt. Gen. Louis C. Wagner Jr.
Deputy Chief of Staff
For Research, Development and Acquisition

Our soldiers today are the best I have seen in over 31 years of service. They are well qualified, physically and mentally toughened by their training and led by competent and caring leaders at all levels.

The research, development and acquisition community is dedicated to equipping this soldier to make his first shot his first hit. As a result of this firm target, the soldier-first attitude has risen to new prominence. Before soldiers can achieve their maximum capability, there are some crucial wickets to pass through: ideas, concepts and advanced technology. From this nurturing of the flow of technology comes state-of-the-art capability, which equates to the hardware and survivability needed to win on the battlefield.

Proper soldier-machine interface is receiving increased emphasis in the design of all our equipment. We must force weapons makers and Army program managers to pay more attention to soldier-machine interface problems as they lay out a new system on the drawing board in the concept formulation stage. The soldier must be "in the loop." If proper attention is paid to the manpower function and requirement in relation to the hardware, the system will be far more effective in battle.

The capabilities of the average soldier will be a determining factor in system design. With fierce competition for top-quality recruits facing the Army in the future, both qualitative and quantitative



Force modernization, in reality barely begun, is becoming institutionalized in an Army that has little choice but to try to capitalize on advanced technology. But if today's research and development is to bear fruit in the future, the effort must focus on achieving key operational capabilities in less time with fewer false starts.



Troopers of the 101st Airborne Division (Air Assault) demonstrate the portability of the Stinger air defense missile in the field.

personnel demands will become critical.

For example, a system that requires the operator to execute 14 steps in proper order in battle is not acceptable because human factors specialists know that most soldiers cannot execute more than four specific actions in a row while under high stress.

Emphasis on the soldier-first initiative is producing increasingly improved support items for the individual soldier. New clothing and equipment technologies mean increased survivability for the smaller and more lethal force of the future. These include research in chemical fibers and fabrics to optimize flame resistance and relief of heat stress; evaluation of new experimental fabrics for ballistic protection; development of improved chemical protective clothing and equipment systems; improved desert camouflage and infrared signature suppression and lightweight cold-weather protection. Microclimatic conditioning units for vehicle crews will soon be fielded in the M1A1 Abrams tank.

Another way that we are enhancing our capability to meet the threat is the ever-increasing lethality of our weapon systems. Army light and heavy divisions are being rearmed and restructured for sustained continuous combat operations at any level of conflict. While we are seeking to increase the strategic mobility of our light divisions, we must also capitalize on improved weapons systems to increase their overall firepower and effectiveness.

Within our limited resources, we are trying to put research and development (R&D) effort into areas which provide the most leverage in offsetting the quantitative—and in some cases qualitative—edge of our potential adversaries. The M1 tank is being brought to a new level of capability with the fielding of the new M1A1 model and plans for a future package of improvements for that superb tank.

The improvement program is aimed at both improved effectiveness and operational and sustainment (O&S) cost savings. The effectiveness improvements are:

- An independent thermal-imaging night viewer for the tank commander.
- Improved commander's weapon station.
- Improved range finder.
- Better survivability.
- Driver's thermal viewer.
- A battlefield management system.

The O&S cost-savings factors involve a 20-percent investment, but expected advantages such as reliability and maintenance improvements, training ammunition cost reductions, improved tracks, direct-support electrical test sets and a self-cleaning air filter will provide return far in excess of the initial outlay. The RDT&E (research, development, test and evaluation) began in fiscal 1985, and introduction to tank production is scheduled for August 1988 or sooner, if possible.

Thinking beyond the M1-series tanks, we are developing a concept for a family of future armored combat vehicles. Scheduled for a late 1980s start, this program will give the Army significant improvement in force effectiveness by exploiting high-technology improvements. The combat vehicle family will support our needs well beyond the year 2000.

Another example of the emphasis on in-

creased lethality is in the munitions area. Technology is dramatically altering the approach to fire support. Massed fires are becoming precision fires. Advanced munitions will be directed at targets rather than at points in space. Their lethality will result from having a self-contained capability to select targets and home in on them.

These "smart" munitions represent the most significant change in conventional indirect-fire support in the Army's history. Microelectronic technology makes it possible to build into missiles and projectiles the ability to detect targets with a variety of advanced sensors. This technology will significantly reduce logistics and manpower requirements while increasing lethality.

The Army's current force structure initiatives reflect changing strategic concerns. As the focus shifted from Vietnam to the potential armored and mechanized battlefields of NATO Europe, force structure became heavier to counter the Soviet threat. Therefore, we applied technologies to support a heavy mechanized force; but in light of the current need for rapid deployment, we are seeking ways to reduce the average weight and size of equipment.

Exciting advances in this "down-sizing" process have produced a new nonmetallic composite armor, now being tested on the M2 and M3 Bradley fighting vehicles. This plastic armor, reinforced with E-glass and S-2 glass fibers, is being demonstrated on a Bradley turret, with a weight savings of 15 to 20 percent anticipated. An unanticipated finding is that the glass laminate is a better damper of sound and vibration from the main gun than aluminum.

In providing the 9th Infantry Division (Motorized) with lighter equipment, we are procuring, for example:

- A mix of fast attack vehicles, 1¼-ton HMMWV (high-mobility, multipurpose wheeled vehicle) and CUCV (commercial utility cargo vehicle) trucks, five-ton trucks and a palletized loading system eliminating the need for a range of vehicles in the ¼-ton through 10-ton classes.
- A mix of 155-mm and 105-mm howitzers and the introduction of the MLRS (multiple-launch rocket system) to the division in fiscal 1986. Procurement of towed 120-mm mortars is also planned.

Trends in the force at large also reflect down-sizing. For example, the "Tacfire" artillery fire direction equipment will be replaced by the improved advanced field artillery tactical data system (AFATDS). In addition, the logistics community will replace large computers with smaller and easily portable models.

The Army is emphasizing improvement in ammunition logistics. The new initiatives include improved plastic packaging for current and future ammunition that will be lighter, less bulky, easier to handle and cheaper and will possess better nuclear, biological and chemical protection characteristics, being easier to decontaminate. A technology base program has been established for improvement of ammunition packaging and handling.

One of the driving factors in down-sizing the force is to make it more supportable; however, the anticipation of



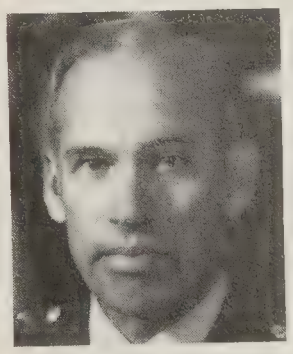
greatly accelerated consumption rate
supplies and attrition of equipment h
made even tougher the challenge of
proving our support capability.

The Army has recently establishe
number of "battlefield sustainment ob
tives." They reflect the complex natu
sustainment issues but are ultimately
cerned with reducing the demand fo
gistical support. These objectives ar

- Balance prepositioned war res
stocks.
- Significantly reduce maintenanc
quirements.
- Eliminate unneeded weight and b
- Reduce the demand of the log
system for money and manpower.
- Field survivable logistics support
tems.
- Create a capability to manage
casualties.
- Protect critical industrial-base
sources.

The demand for logistical suppor
be reduced by implementing the d
sizing initiatives in our "Army of E
lence" force structure goals.

Industrial-base preparedness is a m
of great concern. Wartime sustaina
requires funding support for the r
sary mobilization manufacturing cap
in U.S. industry. The objective of
program is to satisfy materiel demar
a prescribed level within one year
decision to expand production.
plans involve billions of dollars and
not been well supported in the pas
intend to focus on this in the future,
in the constraints of a limited buc



LT. GEN. LOUIS C. WAGNER JR. was named deputy chief of staff of the Army for research, development and acquisition in July 1984. He had previously served as assistant deputy chief of staff for force development in the Office of the Deputy Chief of Staff for Operations and Plans since January 1983. A 1954 graduate of the U.S. Military Academy, Gen. Wagner later taught there for three years, after earning a master's degree in theoretical and applied mechanics from the University of Illinois. He was assigned to the Military Assistance Command, Vietnam, as an advisor. After commanding an armor battalion at Ft. Riley, Kan., and Ft. Bragg, N.C., and attending the Naval War College, he returned to Vietnam as an infantry and armor advisor. Gen. Wagner holds a Distinguished Service Cross and a Silver Star from his Vietnam service. On his return to the United States, he was assigned to the Office of the Assistant Vice Chief of Staff, U.S. Army, then to a number of special materiel acquisition projects in the Office of the Chief of Staff. He was then posted to West Germany, where he commanded the 1st Brigade, 3rd Armored Division, during 1974–76. He was subsequently assigned as the deputy director for materiel plans and programs in the Office of the Deputy Chief of Staff for Research, Development and Acquisition, followed by assignment as director of combat support systems there. During 1980–82, Gen. Wagner commanded the U.S. Army Armor Center and Ft. Knox, Ky., and was chief of armor.



The effectiveness of front-line air defense weapons such as the Stinger missile will be greatly improved by the developmental short-range air defense command and control system.

/e must maintain a limited number of ernment-owned manufacturing facili- which are either government or con- or operated. These plants manufac- major items, large-caliber munitions special propellants that cannot be itably or safely produced by private rprises. Funding to support a "surge" luction capability for selected, highly al items is essential.

n 1972, the Army's primary mobility and firepower weapons systems were rapidly approaching obsolescence. A and immediate requirement to re- or modernize these systems was evi- The Army leadership thus estab- l a program to focus technology and opment efforts on systems identified ing most crucial to execution of the ce's combat mission.

e major development efforts emerged, ed the "Big Five." These systems, n will provide the mobility and fire- r necessary to support the Army un- e year 2000, are now being produced fielded. They are the M1 Abrams battle tank, M2 and M3 Bradley ng vehicles, AH-64 Apache attack pter, UH-60 Black Hawk helicop- nd the Patriot surface-to-air missile n.

e success of the Big Five programs ttributed to the focus established by rmy leadership, not only for Con- and defense contractors, but indeed ie Army itself. Today, the require- to focus scarce resources to gain num capability is more challenging than ever before. In 1972, our doctrine was oriented toward heavy forces; today we must have the capability to realistically engage threats across the full spectrum of warfare, from terrorism to the nuclear battlefield. The explosive advancement of technology, coupled with its broad application to weapons systems, makes it even more imperative to define requirements, develop systems and field hardware in a much shorter time cycle.

Recently, the Army Staff concluded a short, but intense, study to identify follow-on initiatives to the Big Five. From that study, an innovative concept has been established to guide development and fielding of weapons between now and the year 2000.

The concept centers on "key operational capabilities," or those war-fighting capabilities the Army must have to fight and win on any battlefield. The key operational capabilities were identified as: reconnaissance, surveillance and target acquisition (RSTA); command, control and communications (C^3); battlefield lethality; battlefield sustainment and soldier performance enhancement; and Air Force and Navy support. Other capabilities such as strategic and intratheater lift were recognized as being critical, but are less affected by Army research, development and acquisition activities.

The concept of key operational capabilities capitalizes on those technologies where the United States has an advantage, for example, microchip technology and biotechnology. This competitive edge provides the potential to achieve a significant improvement in war-fighting capabilities, which will offset quantitative deficiencies.

The potential for improvement also extends across the entire spectrum of fighting capabilities, including the key areas of battlefield synchronization and deep-attack capability. Such an improvement not only will change the nature of land warfare but will also shape it in U.S. terms as opposed to those dictated by a potential enemy.

How were the key operational capabilities derived, and how will they affect research, development and acquisition (RDA) between now and the year 2000? Critical tasks were identified for battlefield success that the Army must accomplish in this 15-year time frame in order to achieve key operational capabilities. The tasks take into account both the doctrine of AirLand Battle and the war-fighting concepts of "Army 21," the Army's vision of the battlefield in the 21st century. The key operational capabilities provide a means of packaging the necessary systems, programs and technologies to ensure that priority Army research, development and acquisition efforts are supported in the annual program, planning, budgeting and execution cycles.

The first critical task of the Army is to achieve synchronization of the AirLand Battle. It is expected that the potential enemy will outnumber us gun for gun and in manpower. Our advantage must be gained by bringing to fruition the nation's capability in high technology, so that we may field the systems necessary to control the battlefield and offset enemy numerical superiority.

A second critical task is to field a deep-attack capability for heavy and light forces. We must be able to detect, identify and attack enemy follow-on forces, command and control centers, and logistics operations. With their disruption, we can be successful. Without it, we cannot.

The Army must, of course, continue to define and refine joint service operational capabilities. We fight as a team with the Air Force, Navy and Marine Corps and must influence their RDA programs.

The key operational capabilities provide the basis for the selection of systems

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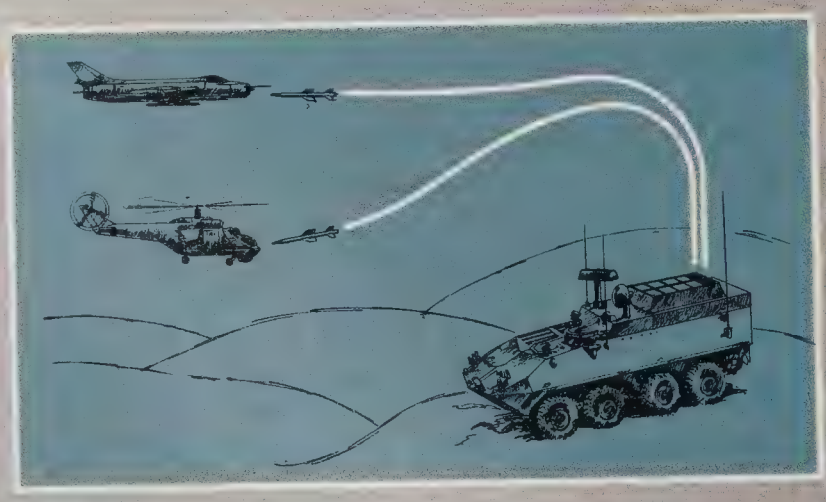
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Dismountable Short-Range

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g firepower of the M242 25mm
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lightweight, mobile, air trans-
able, and lethal weapons system.
/e call it HUMMER-25. Its out-
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e Turret) System which integrates
M242 25mm automatic cannon
the HUMMER. HUMMER-25
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Advanced day/night optics can identify and magnify targets on dual video-display screens within the vehicle's light armament enclosure. Turret drives are sized for a 300% increase in rotating turret weight. And for totally remote operation, the commander's fire-control console is removable.

HUMMER-25 is a cost-effective alternative to larger, heavier and more expensive weapons systems. It is flexible, simple, and powerful.

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LTV Aerospace and Defense Company, AM General Division, P.O. Box 3330, Livonia, Michigan 48151-3330 U.S.A. Telex 023-5652. Cable: AMGENCOR-DET. Phone No. (313) 522-4200.

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LTV Aerospace and Defense
AM General Division

and programs to be emphasized in the 15-year period ahead. Specifically, each system in development must clearly demonstrate that its presence will significantly enhance the war-fighting potential of the Army and that it will materialize before the year 2000.

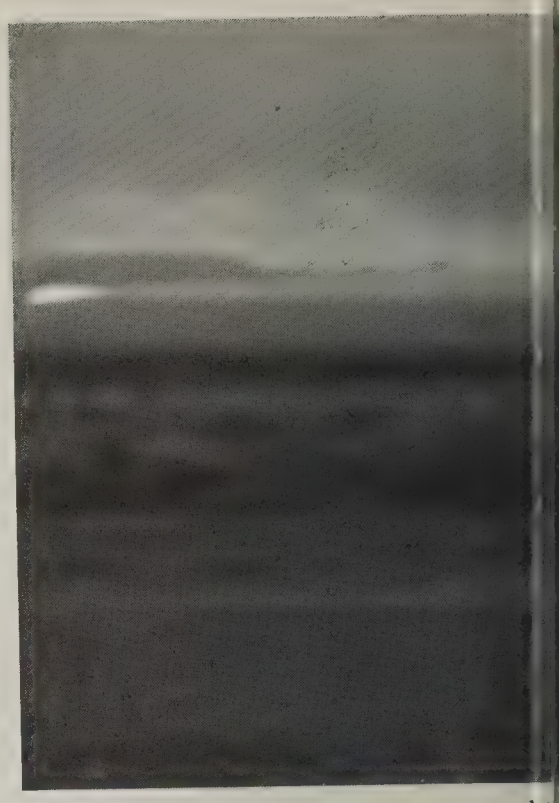
An in-depth review of the major systems and programs being developed within the framework of the key operational capabilities starts with those essential to the critical task of synchronization of the battlefield. This effort is divided into two categories: battlefield automation and command, control and communications. In the automation category are such developments as the all-source analysis system (ASAS), a vital adjunct to the wide array of sensors that will cover the future battlefield.

Modern sensor systems can provide massive amounts of raw intelligence data; but, to be of use to the tactical commander, the data must be correlated, integrated and interpreted with minimum delay. The manual processes now in use cannot handle the volume of collected data quickly enough to satisfy the commander's needs. The ASAS will provide automated assistance to tactical intelligence processing, and it will support related areas such as target development, collection and mission management of intelligence and electronic warfare systems, and operations security. Maximum commonality is planned in hardware and software between ASAS and a similar Air Force system to ensure that ground and air commanders share a common perception of the enemy situation. Current plans call for fielding of the basic system within the next two years.

Related to ASAS is the maneuver control system (MCS), which is a combination of hardware and command and control software that gives the tactical commander nearly instantaneous battlefield information on friendly forces. Once the commander makes a decision, MCS facilitates the preparation and distribution of orders via digital-burst transmission, in milliseconds, to subordinate units for execution. The MCS will achieve initial operating capability in early 1986.

The Army's field artillery tactical fire direction system Tacfire, as currently fielded, provides automated data processing of technical fire control data, selection of munitions and volume of fire for enhanced target accuracy; however, Tacfire will not meet the data processing needs of the fire support system of the 1990s and beyond. Its replacement, AFATDS, will significantly broaden and modernize the Army's fire support command, control and coordination systems. The AFATDS will expand the capabilities of Tacfire with no increase in personnel requirements and with greatly reduced size and training burdens.

Hypervelocity rockets are fired from Missile Command's experimental 'Setter' air defense system, during recent firing tests at Ft. Bliss, Tex.



The short-range air defense command and control (SHORAD C^2) system is being developed to allow maximum effective use of short-range air defense weapons. It is intended to increase the probability of successful engagement of hostile targets by ensuring rapid, timely dissemination of command and control information and improving capability for aircraft identification. The SHORAD C^2 system will automate and streamline the present manual process. Computer processors, graphic displays, terminals and data links will replace most human actions and voice communications in order to provide gunners and commanders with the required data quickly and simply.

Battlefield automation also extends to the area of combat service support, where work is under way on several major systems. Among them is the tactical Army combat service support computer system (TACCS), a two-man, portable, general-purpose microcomputer system to automate standard personnel, logistics and medical functions at brigade and battalion levels. Other systems include the corps/theater automatic data processing service center (CTASC), and the unit-level computer (ULC) for use at company level.

A number of other vital systems are also being developed under the C^3 category of battlefield synchronization, in recognition that the command and control of our forces, and the communications that make this possible, are critical to success in battle.

One major effort is the joint tactical communications ("Tri-Tac") program, a joint service and Department of Defense agency program to develop and field tactical multichannel switched communications. The Tri-Tac family of equipment consists of mobile subscriber equipment (MSE), automated telephones and message switches, multichannel radio transmission equipment and other items. The broad goals of the program are to achi interoperability among Defense Dep ment telecommunications systems, pro advanced-technology equipment, eli nate duplication of development and hance interoperability with NATO tems.

With these goals in mind, and to sho the acquisition cycle, the Army will cure an MSE system developed in l part by our NATO allies. The acquisi will save millions of dollars in deve ment costs and allow for fielding in f 1987. The MSE provides corps and sion commanders with the secure, f ble, mobile communications needed command and control on the modern tlefield.

Any future conflict will require bat commanders to locate and iden rapidly and precisely, their own f and other friendly units on a highly bile and extended battlefield. The pos location reporting system (PLRS), a program with the Marine Corps, will the Army that capability. The syste secure, highly resistant to jamming, can be used in all weather on all ter

Initial fielding of the PLRS is sche for 1986. In the future, PLRS will b tegrated with the joint tactical info tion distribution system (JTIDS) Cl terminal to form the Army data dist tion system (ADDS). It will give th my a reliable, jam-resistant data con nications, navigation and identific system for use in the five functional that require C^3 on the battlefield: m ver control, fire support, air defense, tronic warfare, and intelligence and bat service support.

Another important item under dev ment is a tactical net radio system



e of operating in an electronic counter-easure environment. The single-channel ound and airborne radio system (SIN-GARS) will provide the soldier a reli-le, jam-resistant, secure radio system pable of operating on the move and mpatible with current vehicular radios d related communications security equip-ent.

Meeting the severe electronic warfare reat of the future also involves fielding the single-channel objective tactical ter-nal (SCOTT), on which advanced de-lopment was completed in 1983. SCOTT ll provide a jam-resistant satellite com-unication link and will be the Army ound terminal in the "Milstar" satellite mmunications system.

Deep-attack capability, the second of Army's critical tasks, brings with it need for long-range surveillance of emy territory. Helping to fill this need l be the joint surveillance and target ack radar system (JSTARS), a joint gram with the Air Force.

The aircraft-mounted system will detect d locate moving ground targets, com-nd posts, assembly areas and low-flying icopters. The operational effectiveness he system will be enhanced by cueing m other sensors. JSTARS will broad-t simultaneously to multiple ground ions at division and corps levels and l be integrated with ASAS and AF-DS to provide battlefield management l real-time targeting. Fiscal 1986 funds l be used to develop the ground sta-n; the Air Force is developing the air-ne portion of the system.

Historically, a ground commander's atest operational problem has been lack of information concerning the my's location, disposition and inten-tions. The introduction of the remotely piloted vehicle (RPV) will enhance the commander's capability to gather intelligence behind enemy lines and assist in delivering fire on the units so discovered. The RPV is a relatively small, propeller-driven, remotely controlled aircraft that is difficult to track with radar or visual systems. A prototype system has been used to support field training exercises, and development and operational testing is continuing.

In addition to surveillance systems, the Army is working on missile systems to strengthen its deep-attack capability. A follow-on program to the Lance missile system in its nonnuclear role is the joint tactical missile system-Army (JTACMS-A). This is a conventional MLRS-launched ballistic missile being pursued for the early 1990s. This weapon will allow the corps commander to attack second-echelon enemy offensive forces at extended distances far beyond the range of cannon or rockets.

Another vital component of deep-attack capability is the development of MLRS warheads with terminally guided submunitions. The submunitions will enable the MLRS to precisely attack hard targets at ranges more than 30 kilometers from the launcher. The concept calls for the rocket to fly to the target area, where the warhead will dispense multiple submunitions that seek out and destroy enemy targets. These submunitions are being developed in a multinational program with West Germany, the United Kingdom and France.

The ability to defeat advanced armor, the Army's third critical task, is being undertaken through several programs, including an armor enhancement initiative (AEI). The AEI will provide our tanks with needed lethality against enemy tank armor projected for the future.

Another antiarmor program involves the development of "smart" munitions for artillery. Examples are the sense-and-destroy armor (SADARM) projectile and the 155-mm "fire-and-forget" munition. The latter, under development since 1983, should be fielded in the early 1990s.

The advanced antitank weapon system-medium (AAWS-M) is intended to replace the Dragon missile as the Army's medium man-portable antiarmor weapon system. It will provide antitank support for infantry, airborne, air assault and Ranger units. It is the highest priority development program for our light infantry forces.

Given the numerical superiority projected for the potential enemy on the battlefield, enhanced performance of the individual soldier has a rightful place on the list of the Army's critical tasks. Such performance enhancement is being addressed by a variety of programs.

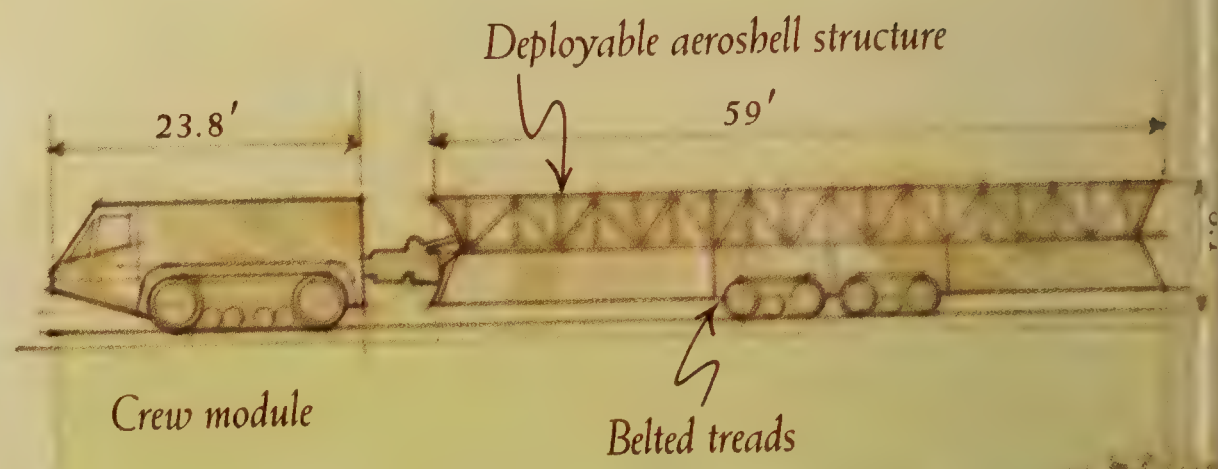
Vehicle integrated intelligence (VINT^2) is a program to provide small-unit commanders, such as tank platoon leaders, with a microprocessor-driven information system that will filter and tailor the type, amount and format of data, then display the most critical information as an aid to combat decision making and control.

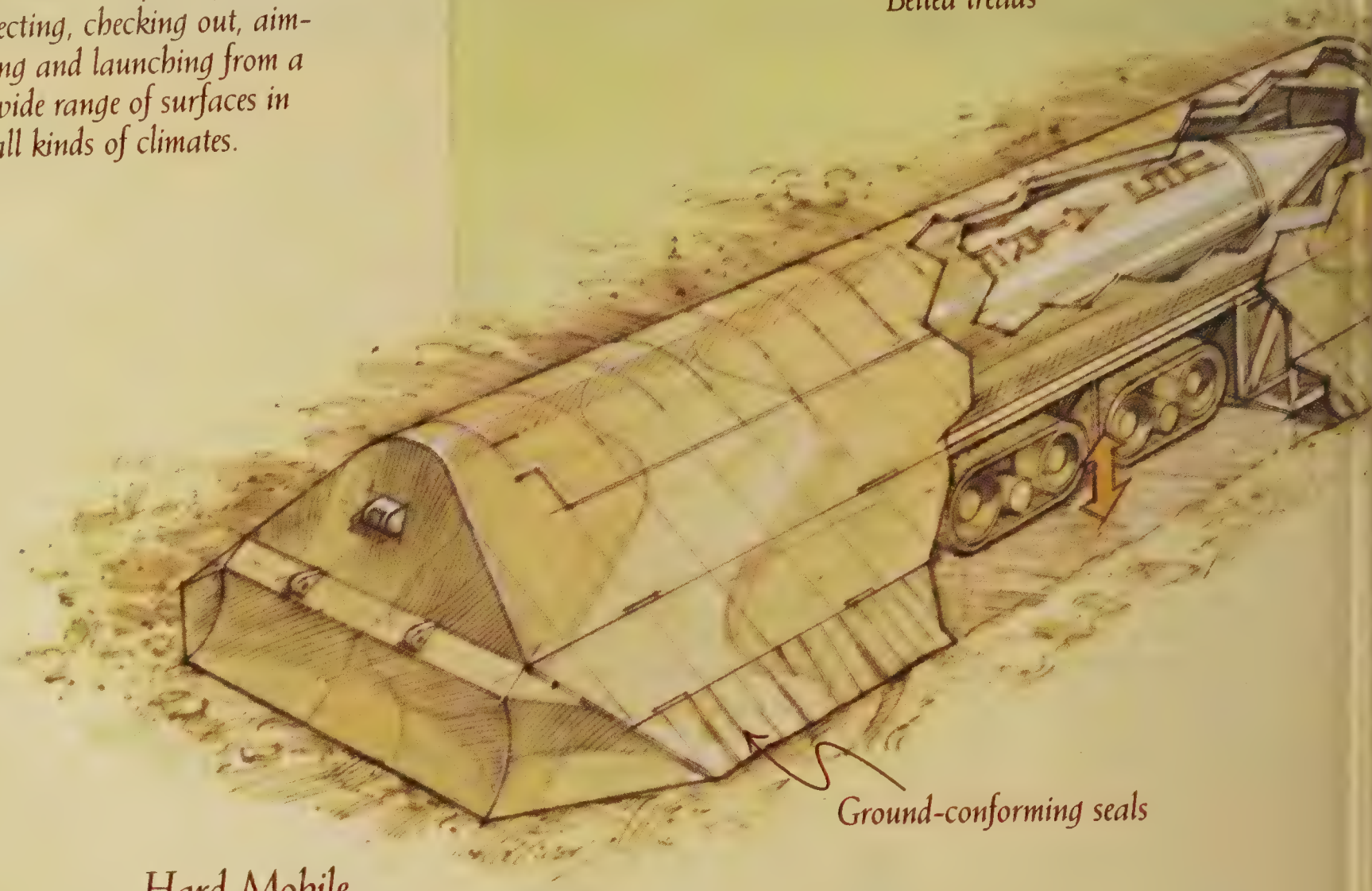
The tactical simulation network (SIMNET) is being developed as a simulator for training in combined arms tactics for leaders of platoons, company teams and combat support elements. It will utilize computer-automated simulations encompassing animation technologies. The first test system will be for a tank platoon.

In the area of medical research, work is in progress to develop effective nuclear,

Missile launchers that go just about anywhere.

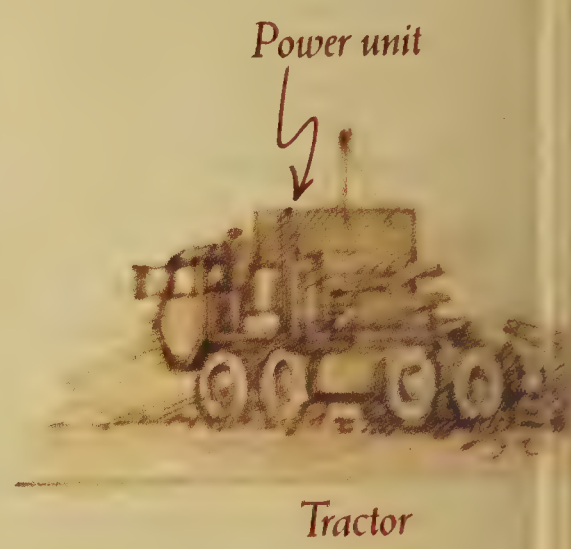
A missile system's effectiveness can depend heavily on high mobility as well as survivability. In some 30 years of meeting these two goals, Martin Marietta has addressed virtually all of the engineering and integration challenges facing planners of next-generation mobile missiles. These issues include transporting, protecting, checking out, aiming and launching from a wide range of surfaces in all kinds of climates.





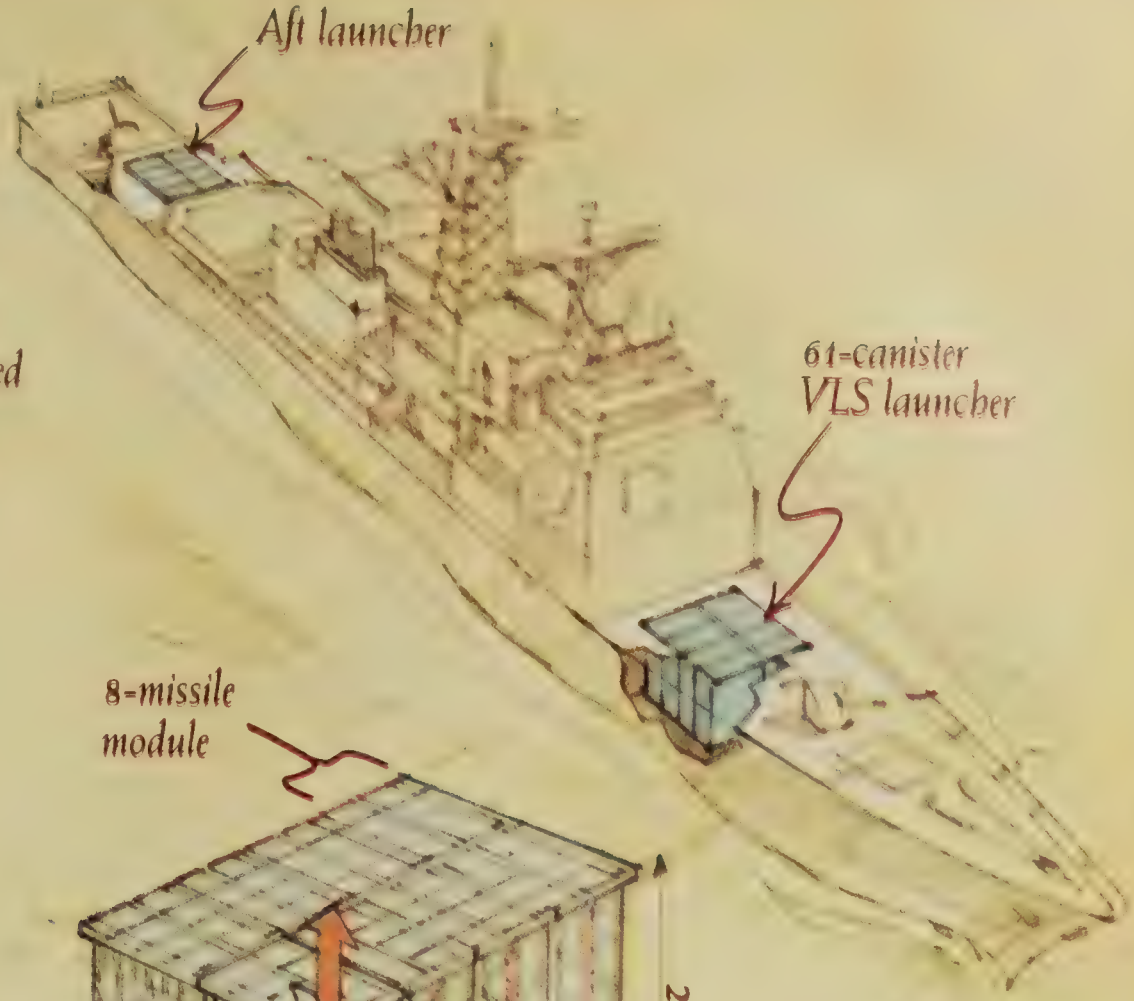
Hard Mobile Launcher

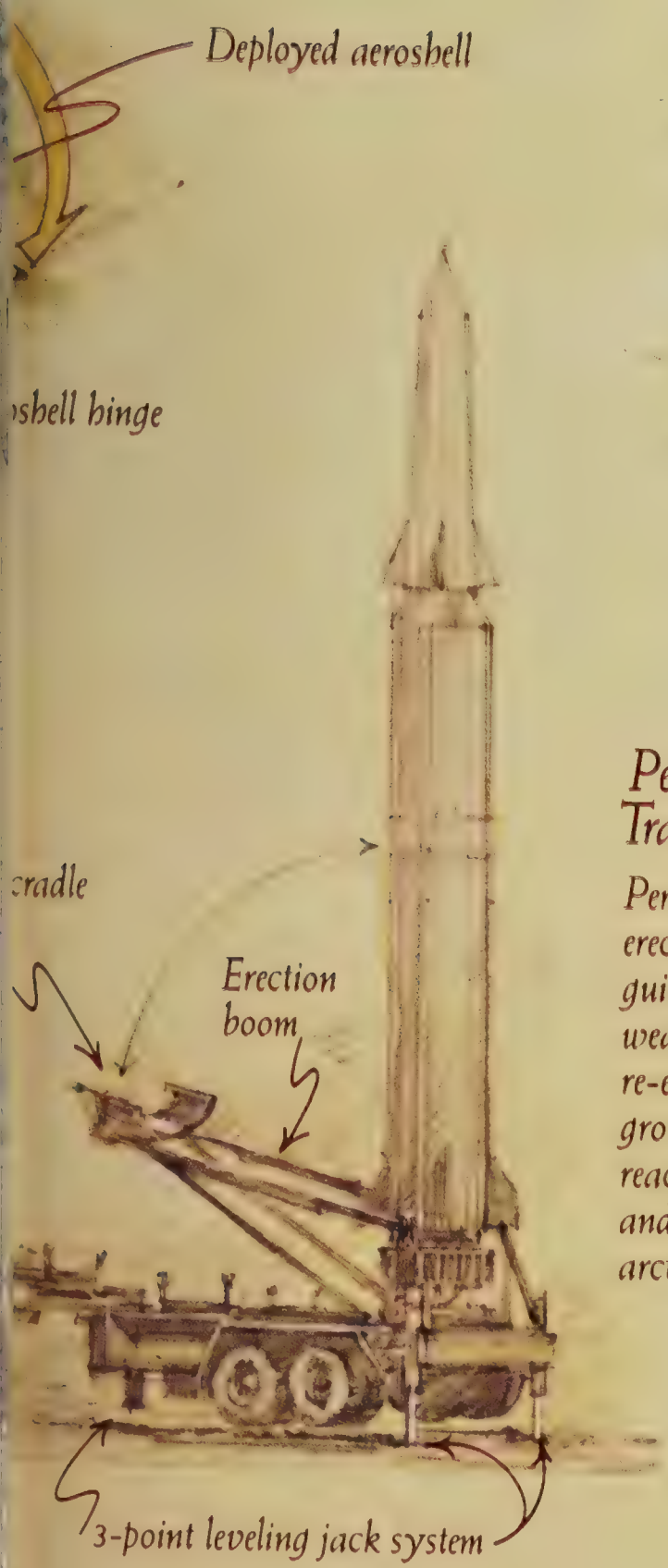
With belted treads for maximum on/off road, all-weather mobility, this launching system for the Small ICBM requires no site preparation.



Vertical Launching System

A mix of canister-stored missiles, stowed in protected below-deck locations, combats surface, air and underwater threats.





Pershing II Transporter/launcher

Pershing II, with its mobile erector/launcher, inertial guidance system and all-weather terminally guided re-entry vehicle, provides ground forces with quick-reaction firepower in terrain and climates ranging from arctic to desert.

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The multiple-launch rocket system, whose basic version is now in the field in some numbers, will also be the vehicle for the Army's 'deep attack' weapon, carrying advanced terminally guided submunitions.

biological and chemical (NBC) pretreatment compounds to be administered in advance of combat to increase the survivability and effectiveness of the soldier on the integrated battlefield.

Enhancing the capabilities provided to the Army by its sister services is just as essential as the other tasks that have been identified. The principal requirements that the Army will support vigorously are expanded strategic lift capability, both airlift and sealift, and strengthening of tactical and strategic air capabilities. The continuation of the joint initiatives between the service chiefs is essential.

The key operational capabilities concept serves to focus RDA activities on the systems and programs that will equip the Army to achieve its six critical tasks, and thus to win on battlefields through the year 2000—even against numerically superior forces and equipment.

Acquisition and fielding are, of course, the payoffs of the RDA cycle, and there are many prime success stories of which we can be proud. I will only discuss three as examples.

The tank remains the main offensive and defensive ground weapon in the Army. M1 Abrams production and fielding is continuing worldwide with a total of 2,727 tanks accepted as of 31 May. This equates to 21 operational tank battalions or armored cavalry squadrons, including one battalion in the North Carolina Army National Guard.

The fielding of the M1 to the North Carolina Guard underscores the Army's commitment to modernize the reserve components. The M1 is the most powerful, mobile and survivable combat vehicle ever fielded, and it can outperform any other tank on the battlefield.

Beginning this year, the Abrams will incorporate the West German-designed, U.S.-manufactured 120-mm smoothbore gun, an improved NBC protection system and improved armor. This new version of the M1 is designated the M1A1.

The Abrams continues its excellent track record with regard to operational capability, reliability and logistics supportability. The 1984 "Reforger" operations in Europe saw the largest concentration to date of M1s in a battlefield exercise. The 282 tanks engaged represented the 3rd Infantry Division, 2nd Armored Division and 2nd Armored Cavalry Regiment. This combined tank force achieved a mission-capable rate of 96 percent. The Abrams, with twice the horsepower of its predecessor, the M60, and its "shoot-on-the-move," stabilized gun platform, continues to elicit raves from its crews.

While we must be prepared for both nuclear and nonnuclear contingencies, our first response capability must be adequate conventional firepower. As enemy units advance, there may be critical periods when large numbers of targets threaten to overwhelm the capacity of tube artillery. When this happens, we must be able to strike deep with great accuracy and massive firepower, as well as be capable of attacking enemy units up to the forward edge of our troop positions with concentrated, responsive fire.

The multiple-launch rocket system is the weapon that fills this need. The MLRS has been a real success story in terms of cost, schedule and performance since the first rockets and launchers were delive in May 1982. As of June 1985, the A had accepted 186 production launc and 19,530 rockets. To date, 12 M batteries have been fielded with in operational capability achieved in M. 1983 at Ft. Riley, Kan.

The system incorporates several b in efficiencies. The rockets are seale pods at the factory and require no m tenance. The carrier vehicle is a de tive of the Bradley fighting vehicle has the same power train and level o mor protection for the crew. The ve cab is designed so that crew members remain in the cab during rocket firin positive overpressure system protect crew from exhaust gases during lau

Attack helicopters continue to be a element of the Army's combat capab They provide our forces with a hi mobile, long-range, lethal, antiarmo pability, day and night.

In Europe, a ground attack on our f will be spearheaded by masses of arm vehicles. Soviet doctrine stresses bui overwhelming momentum with *blitzk* like tactics. The unit frontages inv

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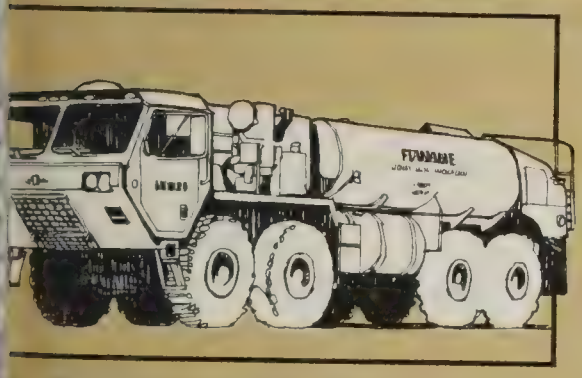


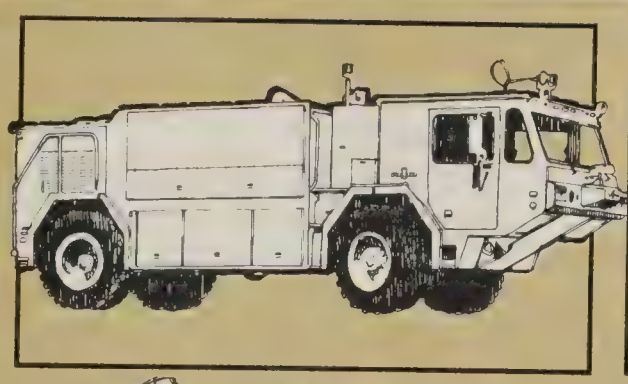
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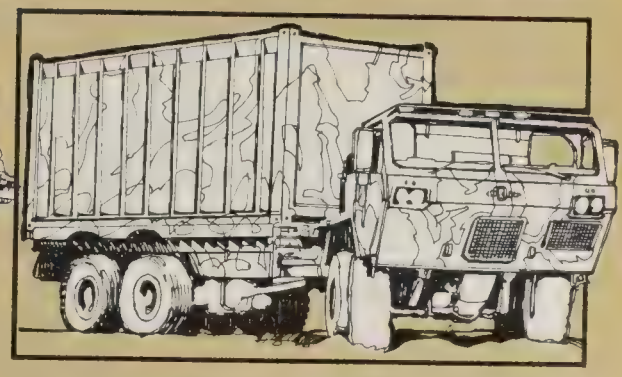
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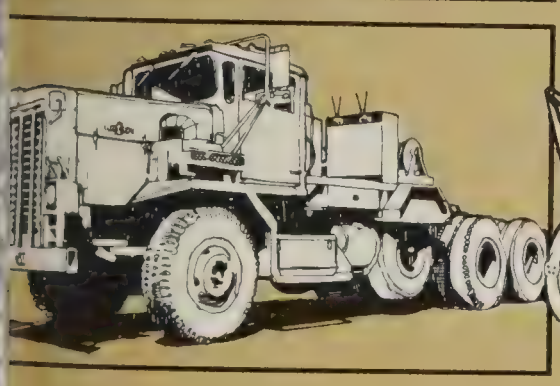
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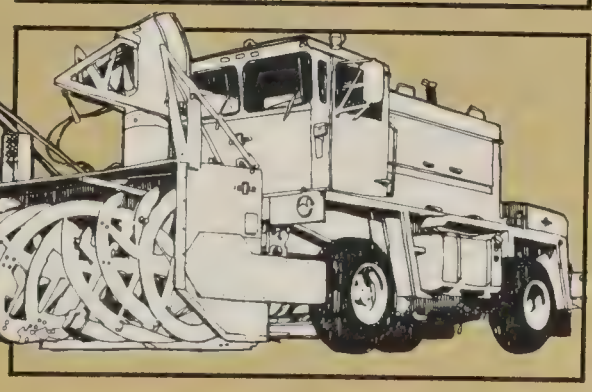


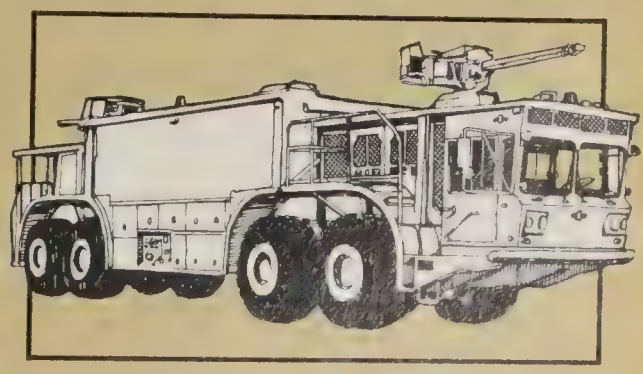












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would mandate that we concentrate on the enemy's main avenue of approach and quickly counter his armored thrusts.

The AH-64 Apache attack helicopter offers the combination of high movement rates, freedom from terrain obstacles and the ability to destroy point targets around the clock, even during adverse weather conditions.

This twin-engine helicopter represents a significant increase in performance, firepower and survivability when compared with its predecessor the AH-1S Cobra. The Apache's agility enables pilots to take advantage of terrain, vegetation and even buildings to avoid detection. A target acquisition and designation sight (TADS) and pilot night-vision sensor (PNVS) enable the crew to navigate and attack in darkness, bad weather and on an obscured battlefield.

Thirty Apaches had been delivered to the Army as of June 1985. In addition, the fiscal 1984 (112 aircraft) and fiscal 1985 (138 aircraft) contracts have been signed. The fiscal 1985 contract for both the aircraft and TADS/PNVS contain reliability warranties as proof of quality of the Apache.

In support of the fiscal 1986 fielding, aircraft are on station at both Ft. Rucker, Ala., and Ft. Eustis, Va., to provide for aircrew and maintenance training.

All indicators point toward continued success with the three major programs mentioned, as well as many other weapons systems not mentioned; but where do we go from here? The Army must continue to be innovative and to improve the way we do business to get the greatest capability for each taxpayer dollar.

A key means to accomplish this is to request industry's support in developing new systems for the Army. It really does not matter whether these efforts are in answer to solicitations for nondevelopmental items or come in as unsolicited proposals, nor is industry support restricted to U.S. shores. If our allies have developed an item of equipment for which we have a requirement, it makes little sense for us to reinvent the wheel.

Industry support offers many advantages to us. There is a time savings because of the possibility of a shorter acquisition cycle. It is conceivable to go straight from a market investigation to procurement by optimizing testing. The use of commercial manuals, where possible, rather than developing standard Army manuals, offers dollar savings as another benefit of industry support.

Finally, consideration for replacing military specifications and standards with commercial ones when applicable would greatly facilitate industry's ability to develop cheaper equipment. It can work if we let it. All you have to do is look at such items as the commercial utility cargo vehicle, the West German M.A.N. 10-ton truck and the new 9-mm Beretta pistol to see the results.

We also need to concentrate on defining requirements completely and clearly at the outset of a development, so it can be "designed right" the first time, without false starts. We cannot afford the "I think this is what I want" approach to systems design. The user has to step forward and state clearly that a requirement exists. Those responsible for requirements must clearly define the parameters; and the development community has to quickly and economically build to the requirement, eliminating wasteful redesign.

Improved maintenance diagnostics is an initiative with the potential for major savings in both manpower and dollars. Built-in "expert" diagnostic systems reduce the need for lengthy setup and test time. As an example, it is not uncommon to use five to six hours to accomplish an armament test on the AH-1S Cobra. The new Apache has most of that capability already built into the airframe.

Testing procedures need to be examined from the standpoint of combining some phases, eliminating others or using existing results rather than retesting. Testing begins early in the concept exploration and development phases to gain insight into developing a firm requirement with quantitative performance parameters. Testing then continues throughout the rest of the program, requiring vast amounts of time and money.

We must be innovative and not duplicate testing. The accelerated acquisition process, with a goal of four years from the first development milestone to low-rate initial production, will force innovation. There will no longer be the luxury of the "test-fix-test" syndrome that exists today. The shortened cycle will force out of existence expensive, sequential duplicative testing. There is also the need to greatly reduce the amount of time required for test data reduction. With the use of modern computer programs, the two- to six-month data reduction time frames appear to be completely unrealistic. Again, innovation is the key to success.

Experience in the acquisition of major weapons and other materiel indicates that programs are subject to too many uncertainties. There is a need to develop a sound acquisition strategy early in the program. The strategy, to be complete and sound, must incorporate all facets required to acquire and field a complete unit set of equipment. This includes not only the major end item—Abrams, Apache, Bradley fighting vehicle—but all the items needed by a unit to operate that system. This includes trucks, trailers, training devices, diagnostic equipment and communications equipment.

It must also be remembered that when budgets are changed, the impact involves more than the major component of the set. The additions or deletions impact across the board. What does procurement by unit sets offer? It ties systems acquisition to the force structure, as well as providing program stability. Long-range planning becomes easier, along with multiyear procurement.

The Army has made other attempts to improve acquisition management. The Army Development and Employment Agency (ADEA) was created to identify, evaluate and recommend operational concepts, doctrine, types of organizations, materiel requirements, technology and training developments which would improve the combat power of the Total Army. ADEA is a unique organization because it is a small group of dedicated professional military and civilian personnel from various disciplines.

Industry also plays a big role also with the Army's developers in early testing of prototypes and innovative ideas. Collocated at Ft. Lewis, Wash., with a variety of active forces, ADEA has the opportunity to try innovative equipment and tactics in an operational environment.

ADEA contributed to the operational concepts tested with the light attack battalions (LABs) and the combined arms battalions (CABs) of the 9th Infantry Division. Among many concepts tested, some of the most innovative were the fast-attack vehicle, palletized loading system, aviation multipoint refueling system and the integrated command post.

You can tell by the description of initiatives I have discussed that the Army today is not standing still. Force modernization is real and will not be completed anytime soon. To control this gigantic endeavor, however, is a monumental task which requires that we all work together to provide our most important asset—the soldier—the equipment he needs to perform his job in the most effective manner. The RDA community is dedicated to this effort.



How to keep ideas on target.

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It's all part of an Aerojet tradition of production capability hand in hand with reliability. Reliability that has produced a remarkable success rate for Aerojet rocket propulsion units. And has led to a whole new discipline called "surface sciences" to make sure the chemistry is right for the union of electronic parts.

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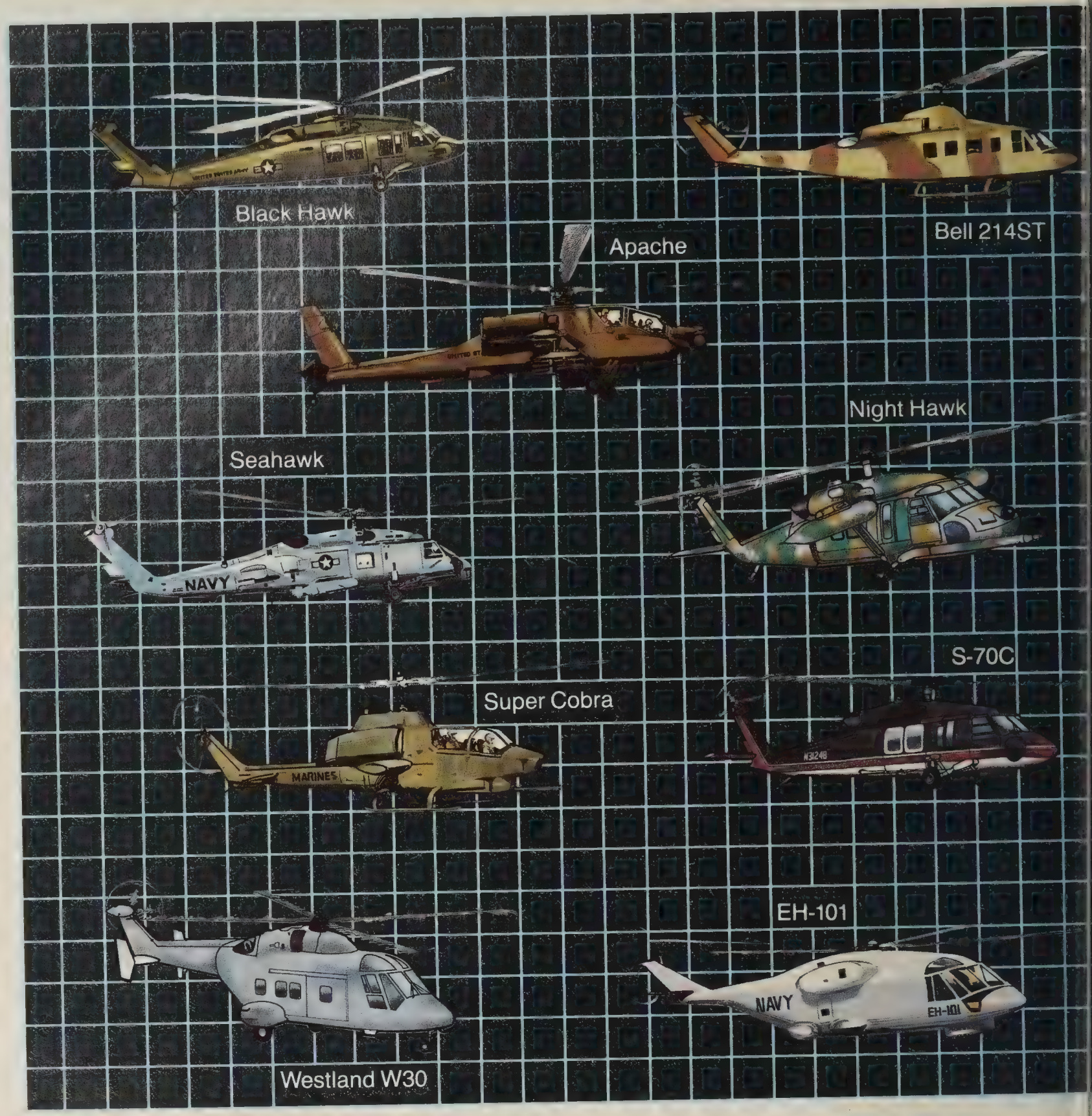
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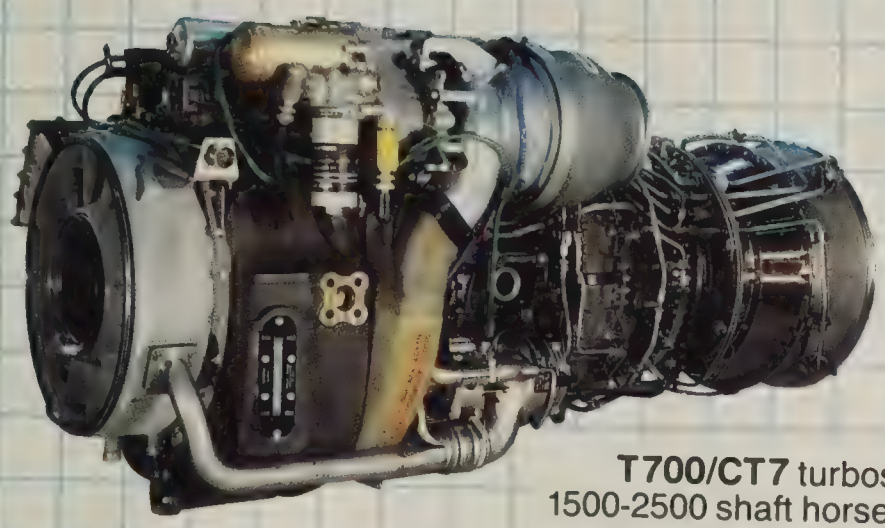
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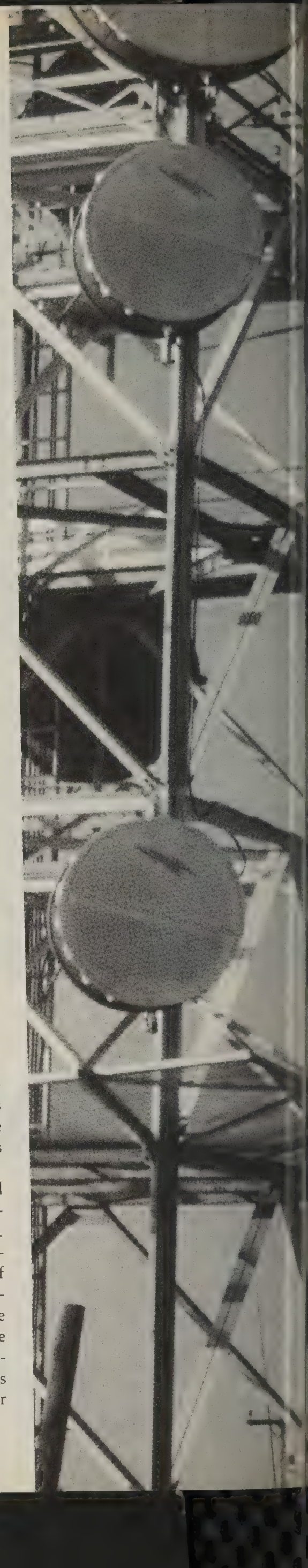
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AISC: The Leap From Training Camp to Field



With 34,000 soldiers and civilian employees at work around the world, the Army Information Systems Command is responsible for the 'nuts and bolts' of the new information mission area—systems acquisition, engineering, management, maintenance and operations.

By Lt. Gen. Emmett Paige Jr.
Commanding General,
U.S. Army Information Systems Command

Seventeen months have passed since the creation of the information mission area and the designation of the U.S. Army Information Systems Command's player-coach role in the Army's game plan—the start of an Army information revolution.

The beginning of fiscal 1986 marks the transition between training camp and the actual fielding of an information mission team.

That team, including the Information Systems Command, other major commands and Lt. Gen. David K. Doyle, the Army's assistant chief of staff for information management, has vigorously worked since May 1984 to define the responsibilities of the commands and rewrite regulations. The team has centralized and realigned organizations, placed information managers at major Army command and installation levels and transferred responsibilities to assist the Information Systems Command in performing its role as the Army provider of information services.

The current Information Systems Command organization of more than 34,000 people around the world had a $2 billion budget for fiscal 1985.

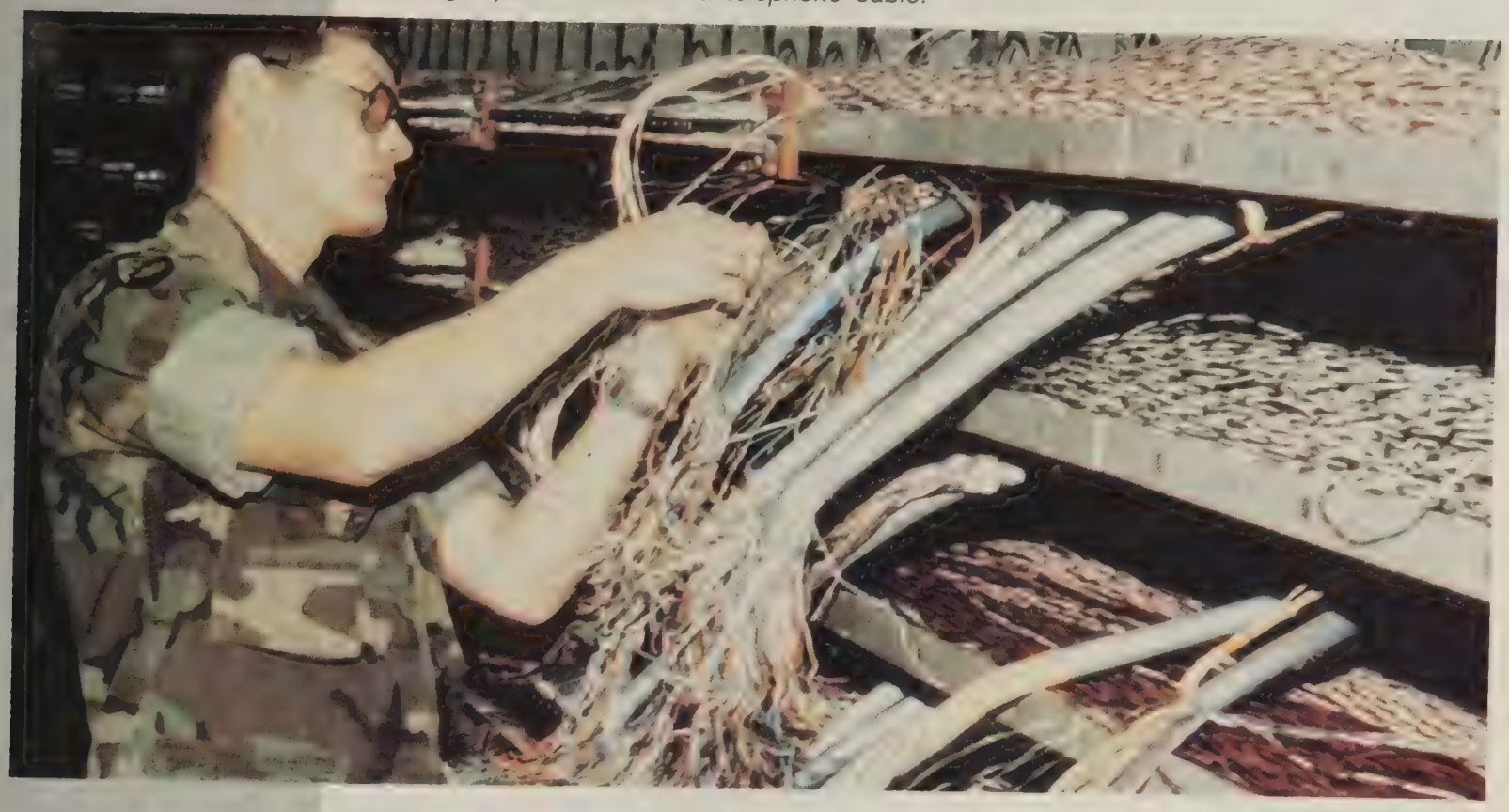
To the average user of information services, the Information Systems Command assumption of these responsibilities has not changed a thing. However, the command was not created to do business as usual.

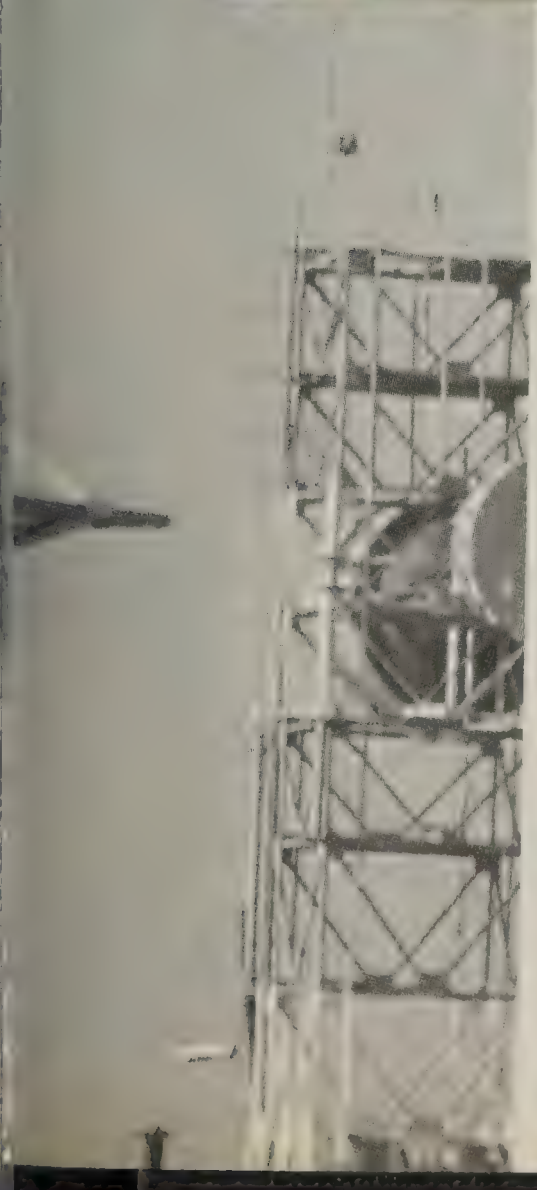
Its job is to bring technology aboard for the Army to permit it to improve efficiency. This is not a painless process. Commanders will find that getting technology is not as simple as buying "off the shelf" to suit their needs of the moment. They will be required to practice much more discipline in order to ensure that their systems provide the most toward information mission area objectives and that they plug into a network, rather than exist as an island.



Microwave towers at Madison Site, South Korea, a facility of the 1st Signal Brigade.

A communications repairman of Signal Battalion Okinawa searches for the right pair of wires in a telephone cable.





Getting this far has been a challenge and a concern unparalleled in the Army since the creation of the Army's Training and Doctrine Command and Forces Command. Army commands have had to bite the bullet while the Information Systems Command has had to swallow—without choking—numerous new responsibilities.

As a keystone of the Army-wide merging of all information systems—communications, automation, audiovisual, publications, printing and records management—in the information mission area, the Information Systems Command emerged from the former Army Communications Command, integrated with the former Computer Systems Command, the Computer Systems Selection and Acquisition Agency and the Army Audiovisual Center.

The first two of the former organizations mentioned—after further restructuring at subordinate levels—have been renamed the U.S. Army Information Systems Engineering Command and the U.S. Army Information Systems Selection and Acquisition Activity, respectively.

The new activities greatly expand the traditional communications and air traffic control missions of a dozen other Information Systems Command subcommands, including specialty activities and traditional signal units around the world.

A major milestone for the Army was the April 1985 deadline for major Army commands (MACOMs) to appoint information managers or directors. These managers have "dual-hat" roles, serving both the Information Systems Command and their MACOM commanders.

They are the cornerstone of the information management area. They work with the Information Systems Command to integrate, standardize and ensure interoperability for their commands' needs. To do this, their staffs include expertise from all information mission functional areas.

These managers are responsible for their commands' publications, printing and records management. They also oversee a large part of the Army's audiovisual assets. Audiovisual operations pecu-

liar to training, particularly, stay as parts of a command's operations mission.

It also is the job of information managers and directors at MACOM and installation levels to plan, coordinate and set priorities for information needs and submit master plans for modernizing systems and activities. This planning is critical in order to ensure that systems are needed, standardized, interoperable, supportable and acquired with priorities in mind.

The Information Systems Command's role in this has been to organize and acquire the talent needed to plan, engineer, acquire, install, operate and maintain information and air traffic control systems and equipment for the Army.

The command has assumed responsibility for regional data processing installations; some Army staff data processing installations; base data processing installations that support multiple users, multiple commands or the standard Army multicommand management information system; office automation systems with a communications capability or that are part of a data processing installation; and other systems that vary from command to command. Most research and development systems are excluded.

The Information Systems Command, like other MACOMs, is responsible for printing and records management only within its command boundaries.

As far as the nuts and bolts of information systems are concerned, more than 200 regulations have been identified as needing change.

The idea of merging information systems and technology is not new. General Motors, for example, bought an entire company, Electronic Data Systems, to manage its information needs. Likewise, AT&T now has a company known as AT&T Information Systems.

The Air Force also has created a similar command to deal with the natural integration of information systems.

The distinction between automation, telecommunications, audiovisual, records management and other information systems is no longer clear-cut. Whereas in the past, one system may have provided data processing and another system provided computer graphics, for example, current technology allows the use of the same system to keep records, print information, transfer information and the like, rather than performing a single function.

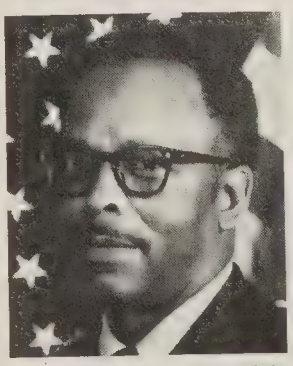
The cost of buying separate systems with limited functions is one compelling reason for merging information systems.

There are several reasons for the information mission area. In the past, there was almost no overall management applied to information systems. There is no reason for the stubby pencil bookkeeping that goes on at all levels, the clerks filing





A signal repairman performs maintenance on an antenna belonging to the tactical satellite detachment on Okinawa, a contingency unit controlled by the Joint Chiefs of Staff.



LT. GEN. EMMETT PAIGE JR. has been commanding general of the U.S. Army Information Systems Command (formerly Communications Command) since July 1984. Previously, he commanded the Electronics Research and Development Command (now Laboratory Command) from May 1981 and the then-Communications Research and Development Command (1979–81). Commissioned from officer candidate school in 1952, Gen. Paige is a graduate of the Army War College and holds a bachelor's degree from the University of Maryland and a master's degree in public administration from The Pennsylvania State University. He has served in a wide variety of Signal Corps assignments including: key staff operations positions with the Defense Communications Agency; deputy chief of staff of the Communications Command; command of the 11th Signal Group and commanding general of the Communications Systems Agency (now the Information Systems Management Activity) during 1976–79. During the Vietnam war, he commanded the 361st Signal Battalion of the 1st Signal Brigade.

Right: an Army signalman at
in the operations control van o
satellite communications facil
Song So, South K



A civilian audiovisual artist works on a chart at Camp Zama, Japan.

This modern telephone switch is installed at the Sanno Hotel, a military rest and recreation facility in Tokyo.





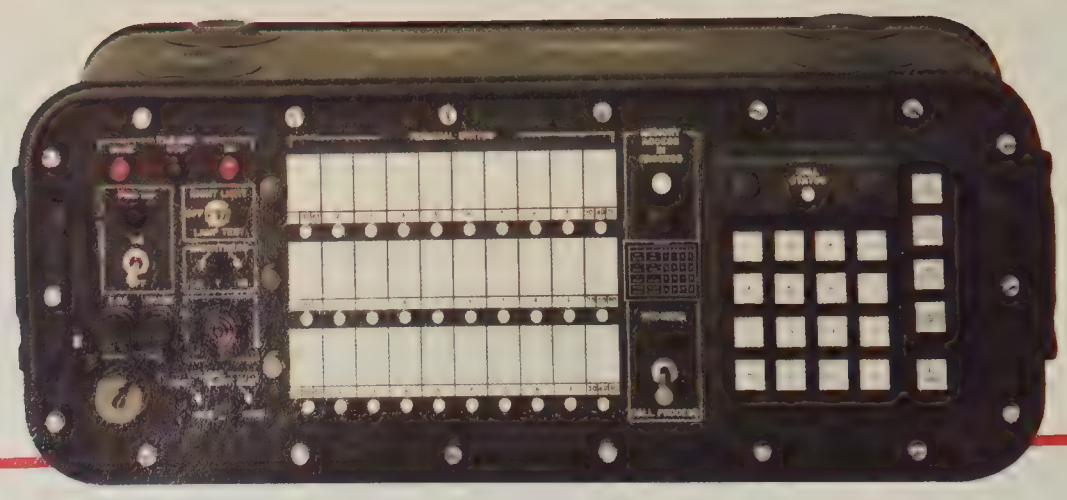
the paper reports in the file cabinets all over the world and the inertia and error that goes into trying to retrieve anything from the system or move it from place to place.

The Military Traffic Management Command, for example, uses a bar code system, like those used in many store checkout lines, to control shipments. Some posts have similar systems for property control. Centralization of management will allow for the introduction of a standard that makes this kind of system available to all users.

Getting to the point of standardization will require strong enforcement and commitment. Many commanders, however, are skeptical of the Information Systems Command's ability to deliver.

The Information Systems Command is not promising to solve all the problems associated with funding and acquiring information mission area technology. It will, however, allow commands to do a better job than they are now able to do. The Information Systems Command will have to make a case for information mission area requirements and convince the Department of Defense and Congress that the Army is using resources efficiently.

Getting the job done entails more than managing hardware and software. Today's soldiers and Army civilians need motivation and training where the new information mission area is concerned. First, people have to learn that the information mission area disciplines overlap,



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traffic control remains a part of the
mation mission area: an Army con-
er talks to a pilot at Rankin Army
eld, Camp Zama, Japan.





Audiovisual activities are among the information mission area functions merged to produce the Information Systems Command: an Army photographer at work in the field.

and they have to be willing to learn more than their current specialties. Secondly, the Army is moving to incorporate information mission area courses in all formal training, to allow the communicator to learn about automation, to teach the automator about audiovisual and so on.

Another challenge is to recruit entry-level talent into government service. The Army cannot compete with industry when a computer science graduate earns a starting salary of $25,000 and the Army pays maybe half that.

What the Army does have to offer is upward mobility and continued training. It must do a better job of recruiting young people in these disciplines for career incentives.



civilian worker re-
ring signal equip-
nt components in
the area mainte-
ance and supply
ility on Okinawa.

During the coming year, the Information Systems Command will continue to assume acquisition and fielding responsibilities for systems and data processing installations which support the Army staff and its field operating agencies such as the Army Finance and Accounting Center and the Army Research Institute.

It will also be responsible for stand-alone office automation systems, including personal computers with a communications capability.

In two years, the Information Systems Command will be responsible for all remaining Army automation.

Furthermore, the command will work to ensure that systems not only support the sustaining base, but that transition to war and wartime needs are incorporated in the information mission area.

Ultimately, improving the hardware, software and availability of information mission area resources will allow the Information Systems Command to service users with more sophisticated systems, standardization and information available to more people.

Systems will be managed. The Army will be able to capitalize on economies of scale. There will be backup support for critical systems; maintenance consolidation will allow for more economy and capital investment plans will be able to stay ahead of user requirements.

Ultimately, efficiency, leadership and readiness will improve—just as they did when the telephone was introduced and was made affordable, efficient, part of a network, faster, portable, capable of transmitting a facsimile and plugging into a computer, and so on and on.

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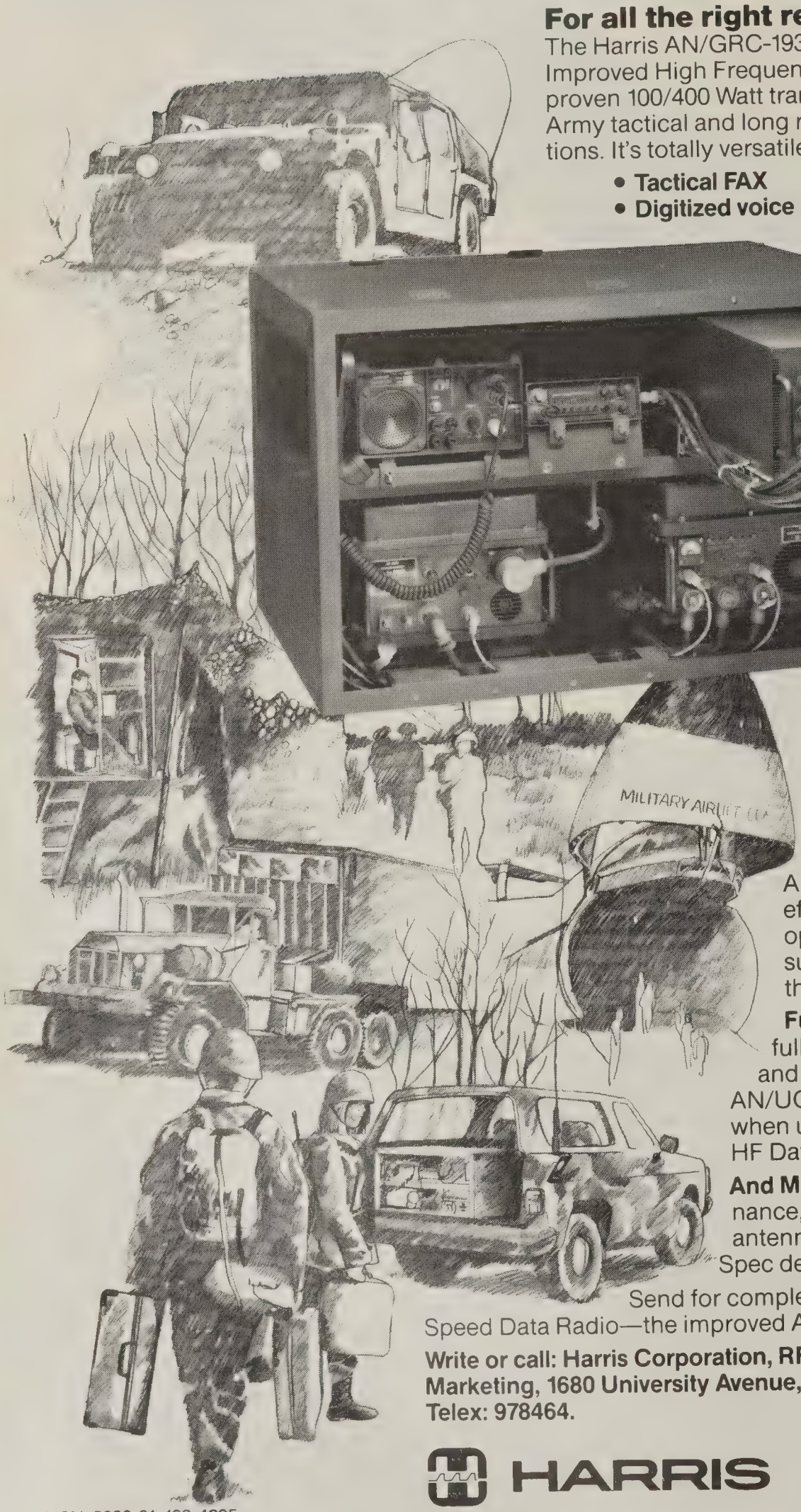
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Soldiers at the Army's Signal Center and School, Ft. Gordon, Ga., support the audiovisual element of information management through the production of television programs for the Army.

Information as a Hammer In Forging Ready Force

By Lt. Gen. David K. Doyle
Assistant Chief of Staff,
Information Management

The last decade has witnessed a virtual revolution in information management technology, offering important new applications for management decision making. Earlier information systems were utilized to automate a handful of centralized financial and record-keeping systems.

Today, we are capable of fielding systems that will assist commanders and staff officers at all levels to accomplish their jobs more efficiently and effectively, ultimately helping us to field and support a more combat-ready army which is responsive both to our country and to our allies.

The shift in the role and function of information has produced corresponding changes in related information terminology. What was called electronic data processing (EDP) in the 1960s became r agement information systems (MIS the 1970s and information techno (IT) in the 1980s. This reflects the exp ing recognition of information as a source that must be exploited and r aged to support a widening range of f tions.

The Army, like private industry, pends increasingly on rapidly acces information systems. This is a neces development to counterbalance the vantages of the Army's main pote adversary, one which is superior in n bers of personnel and weapons. The A is using information systems in dev ing weapons systems that function and as force multipliers to support Land Battle 2000 ("Army 21").

Today, information systems sup



A view of part of the Pentagon telecommunications center.

The antenna farm of the 5th Signal Command's facility at Coltano, Italy.



The goal of a sweeping new Army initiative is to make full use of existing technology and harness the growth of new technology to develop a program that will adequately support our forces on the battlefield of tomorrow.

the Army's major functions: acquir- nd distributing people and equip- training and deploying forces, and ning and applying these forces on odern battlefield. Deployment plans nits and equipment are automated. nation technology is now embedded major Army weapons systems. dern information systems also play ical role in integrating command ontrol systems on the battlefield. enables the commander to make and fast decisions where they are crucial to stay inside the enemy's ion cycle."

we also know that the information ology deployed today will not ade- y support the battlefield of tomor- We must continue to keep pace in ology and management theory.

An Army information management goal is to optimize the use of existing technology and to harness the development of new technology to meet emerging needs. The Army has responded aggressively to the challenge by centralizing information management, moving from "stovepipe" to integrated and interoperable systems.

The Army's policy is to establish an orderly and operationally sound process to direct and foster the use of new information technology. The result of this technology challenge will be better and more timely information for decision making at vital points in peace and war. To accomplish this, our systems must quickly and easily make the transition from peace, through mobilization and to war; or support a war that begins from a "standing start." The Army is establishing a new set of guidelines and procedures that will allow it to manage information with a minimum of effort.

Many changes are being implemented, while others are at various stages of development. The gains in efficiency and effectiveness are apparent and, through teamwork and the exchange of ideas, this progress will continue.

Creation of the information mission area got its roots in 1982 when the Army leadership realized that there was a need for centralized data management and controls and set up a general officer panel to review the service's information needs. This group proposed that an overall information architecture be created and, in 1984, the chief of staff of the Army made the significant decision to create the in-

formation mission area (IMA). This decision establishes information management as one of the major areas to be addressed in the Army's planning, programming, budgeting and execution system.

The IMA encompasses all major areas of Army information: strategic, tactical and sustaining base. The goal is to have these areas' boundaries deemphasized by creating a single, comprehensive, fully integrated Army information architecture. Our goal is to have one completely interoperable information base.

The "subdisciplines" or functions of the information area are automation (including office automation), telecommunications, records management, publications and printing, and audiovisual.

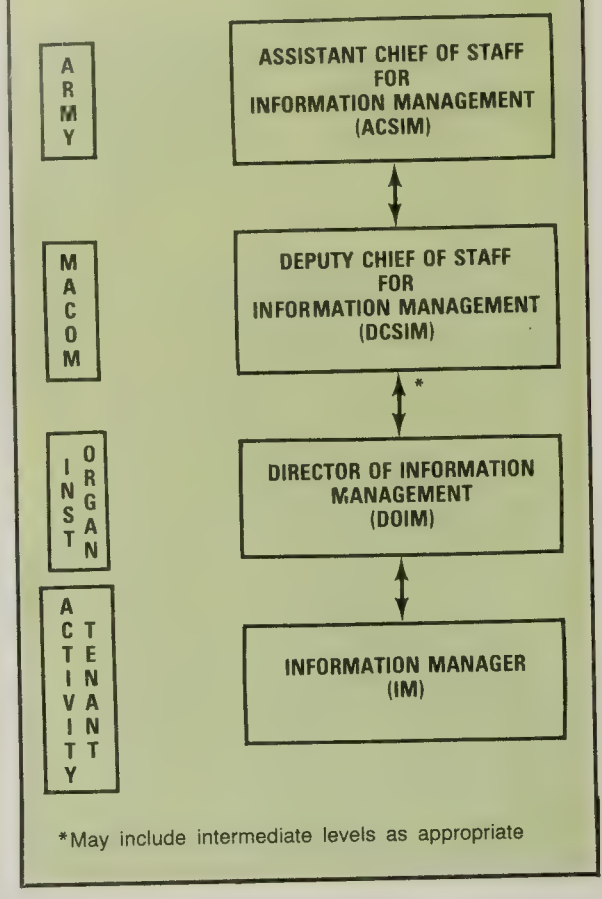
To oversee the mission area, a principal Army General Staff position was created, that of assistant chief of staff for information management (ACSIM). The policy, planning and overall management of all Army information efforts is centralized here. As the Army's information manager, the ACSIM has the mission of accomplishing these information goals:

- Integrate information doctrine and architecture.
- Integrate management of information resources, activities and sources.
- Develop information resource procurement and acquisition strategies.
- Conduct information resource planning, programming and budgeting.

Mirroring the core position of the ACSIM, an information manager is being created at each level of command to manage information resources, provide services and coordinate plans and requirements.

At the major command (MACOM) level, the information manager is designated as the deputy chief of staff for information management (DCSIM). The director of information management (DOIM) at the installation or equivalent level serves as the staff officer responsible for information management. Commanders of major subordinate commands, tenant and satellite organizations may designate their own information managers. Figure 1 depicts the organizational structure for information management.

Figure 1.
Information Management Organization



*May include intermediate levels as appropriate

A separate major command, the U.S. Army Information Systems Command (USAISC), whose headquarters are at Ft. Huachuca, Ariz., was established in May 1984, from the assets of the U.S. Army Communications Command, the U.S. Army Computer Systems Command ar several smaller elements. USAISC's mi sion is to engineer, design, operate ar maintain the Army's automation, tel communications and audiovisual faci ties and centers. USAISC also manag development of standard information sy tems and the acquisition of new Arm wide information systems.

Policy, fixing responsibility for ea level in the information management cha of command and defining the Arm overall information management progra (IMP), is prescribed in Army Regulati 25–1, the Information Management Pr gram. The IMP is the approach throu which all functions within the inform tion mission area are managed, resourc and executed.

The strategy of the IMP combines c tralized management of information pla ning, requirements approval, progra ming and budgeting with decentraliz management and execution of approv initiatives; Figure 2 shows the generic lationship of the components in the formation management program.

The IMP consists of a series of sta starting with the establishment requirements and ending with implementation of approved initiativ The first stage begins with an informat requirements study, a methodology signed to identify information needs a requirements. Identification of the inf mation system requirements provides basis for development of the informat model necessary to define logical relati ships between the Army's informat resources.

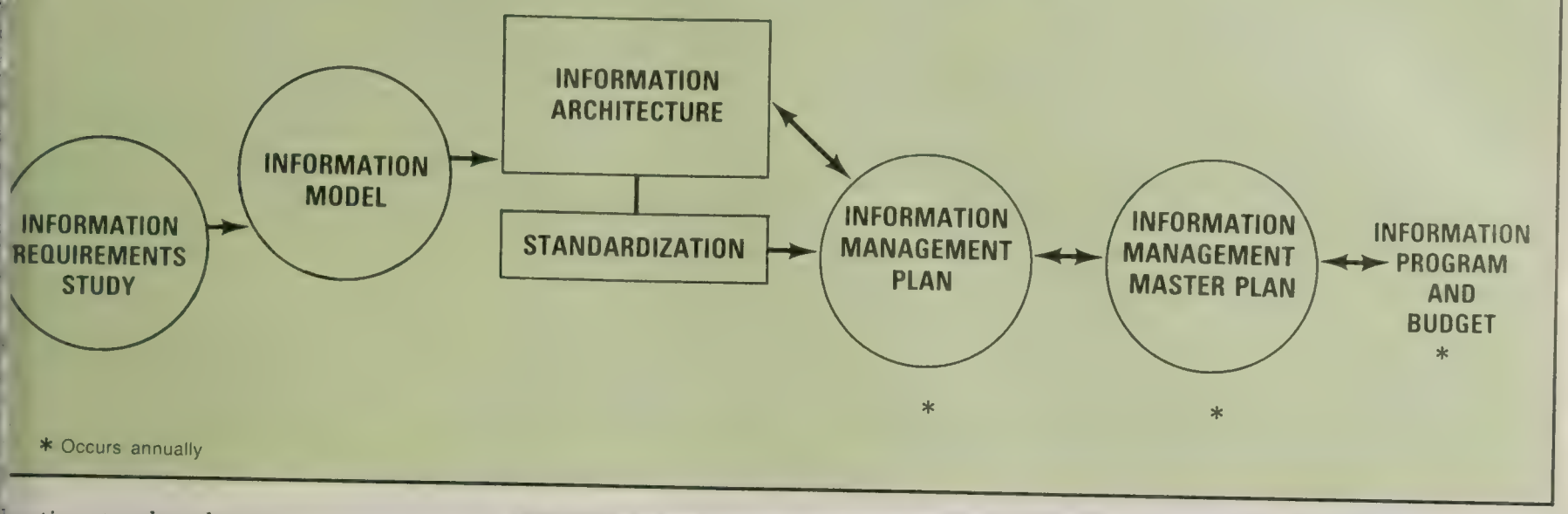
This model leads to development the Army information architecture, wh provides the framework for managem at all levels of the information mis area. The architecture is used to en system integration and the efficient us resources. It also helps identify unne sary duplication and redundancy w encouraging the sharing of informa by providing data manipulation t and the means of communicating i appropriate units and offices.

The information architecture con of three components: the baseline figuration, which represents the curre operational systems; the current ta configuration, which describes the c bility currently under development; the objective configuration, which re sents the capability needed in the fu The information management plan is vehicle to advance from the baseline



LT. GEN. DAVID K. DOYLE became the first assistant chief of staff for information management in April 1984. He had previously served with Forces Command, as deputy chief of staff for operations from 1981 to 1983, then as chief of staff. Gen. Doyle enlisted in the Army in 1951 and was commissioned in Armor from officer candidate school the following year. In the 1950s and early 1960s, he held company commands and battalion staff positions in armor units in the United States and West Germany and taught at the Armor Training Center and Armor School. He served two tours in Vietnam with the 11th Armored Cavalry Regiment and commanded its 3rd Squadron there in 1969. From 1973 to 1975, he commanded the 3rd Armored Cavalry Regiment. A 1972 graduate of the National War College, Gen. Doyle has held several other high staff positions, including assistant secretary of the Army General Staff (1970–71) and deputy inspector general of the Army (1980–81). From 1976 to 1978, he directed armored training at Ft. Knox, Ky., as deputy commanding general of the Armor Center, commander of the Armor Training Center and assistant commandant of the Armor School. He was also deputy commanding general of III Corps and Ft. Hood, Tex., from 1978 to 1980.

Figure 2. Information Management Program



ıration to the objective.

he development of the objective con-
ıration is a lengthy and difficult pro-
; that attempts to rectify past prob-
s and foresee future developments.
ile the formal objective configuration
eing developed, the OACSIM is pub-
ing an interim objective configuration
ed on a three-tiered approach.

he top or first tier consists of large-
e regional centers using large comput-
to support the needs of the general
ulation of Army users. Standard Army
ware applications, such as the stan-
l Army multicommand management
rmation systems (STAMMIS) and the
to support them, generally are at
level. The Army's corporate data base
merge data at all levels so that it is
ily accessible to the appropriate user.

ıe second tier consists of information
ort at the installation/organization
which requires a minimal number
ersonnel. This tier provides informa-
systems sized and configured to sup-
the needs of the installation/organi-
n. The second tier is connected to
irst tier, providing on-line access to
STAMMIS.

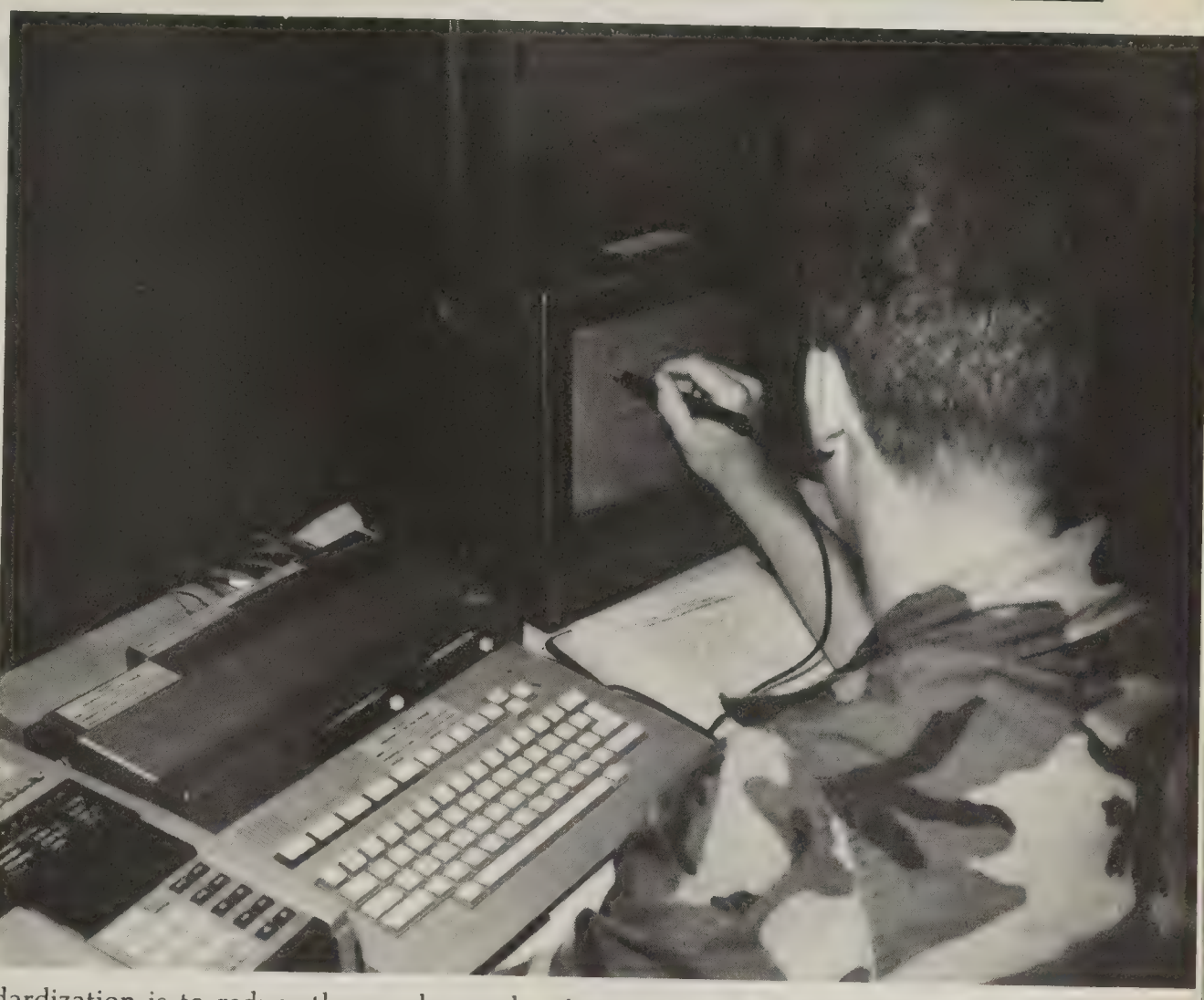
ıe third tier, the user, is provided
ifunction work stations capable of
endent processing, communications,
ge and office automation functions.
objective is to provide the user on-
access to data located at any tier.

series of Army-wide standards is be-
eveloped to ensure compatibility of
mation systems. Our goal is to en-
interoperability while meeting user
and permitting latitude for local
tive. In addition, we can achieve a
-in, plug-out" capability which al-
us to use tactical systems in peace
artime.

e Army's immediate need in standardization is to reduce the number and variety of vendor products it must support. In the short term, standards for minicomputers and microcomputers will be based on a common set of criteria for interoperability. Standardization is being instituted in areas of computer architecture, software, communication protocols and data element definitions to facilitate systems integration and eliminate unnecessary duplication.

The next stage in the information management program is implementation of a structured planning process to identify and approve information initiatives which will satisfy user requirements and support the architecture.

The planning process will result in an



A student at the Army's Signal School, Ft. Gordon, Ga., uses the interactive videodisc delivery system in preparation for assignment to a satellite-communications ground station.



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rmation management master plan will be based upon approved instal-on/organization, major command and ny-wide information management plans Figure 2).

he information management master n is a time-phased program which will vide a logical progression from where are to where we should be going. The ny's information architecture and in-nation management master plan will port the information initiatives of the ied commands, the Office of the Sec-y of Defense (OSD), the Joint Chiefs taff (JCS) and our allies to ensure nological conformity.

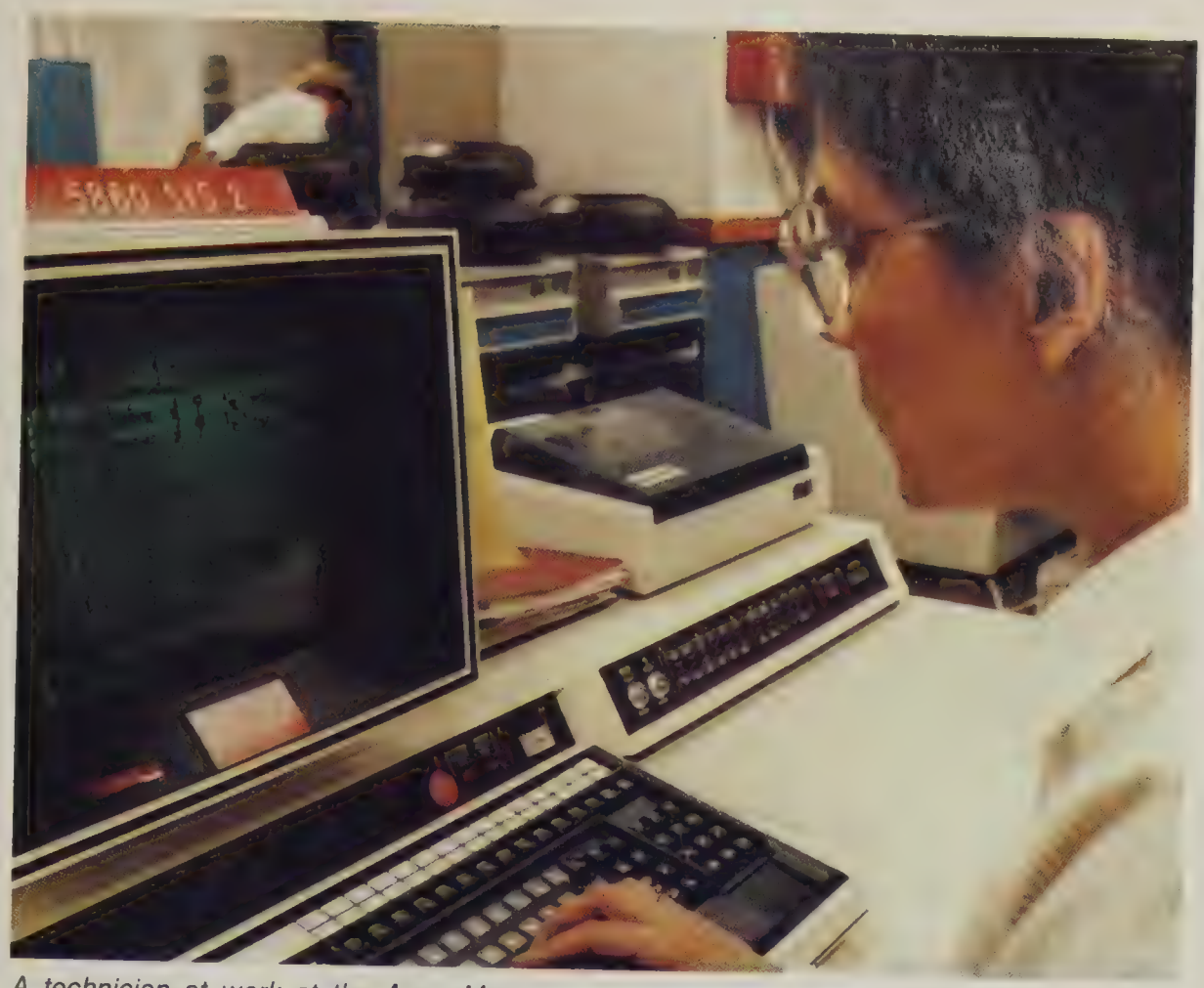
multilevel approval process will en-standardization, interoperability and gration. Approved Army information atives will then be linked to the in-ation program and budget process. e benefits of instituting the informa-management program include fewer, ighter, controls, consolidated man-ent with central approval, integration formation technologies, less paper-, and a closer link between approv-nd resources.

r goal is to be both more effective fficient at all levels of the Army. A r ongoing IMP initiative has to do command and control systems, which ital to the Army's mission. Our prin-thrust is to improve the command-apability for command and control e total force. Command and control itute a total package of information ns essential to a commander for olling an operation.

the tactical arena, the command, ntrol, subordinate system concept CS²) integrates the five battlefield onal areas: maneuver control sys-(MCS); fire support (FS); air de-artillery (ADA); intelligence/elec-warfare (INTEL/EW); and combat e support (CSS). Subordinate sys-nctions are automated or manual re designed to support the internal cal mission or the battlefield func-areas.

lefield command and control sys-such as "Tri-Tac," mobile subscrib-pment (MSE), ground mobile forces e communications (GMFSC) and enable commanders to control all forces and individuals engaged in ecution of their assigned missions nctions.

r optic advances and wide-band nications facilities, such as mili-tellite communications—including



A technician at work at the Army Management Systems Support Activity, Ft. Belvoir, Va., part of the 7th Signal Command serving the data processing needs of the Department of the Army.

the future military strategic tactical relay system (MILSTAR)—are just a few examples of systems that will provide rapid, secure passage of information in-theater and between the theater and national and international levels.

Strategic command and control systems are those that enable the President, the National Command Authority (NCA), departments and agencies to execute their missions. They include such systems as the worldwide Defense Communications System (DCS) and its associated networks—AUTOVON, AUTODIN, AUTOSEVOCOM and others—to provide secure voice and data communications down to the theater or echelon above corps (EAC) levels.

Another initiative involves the development of an Army corporate data base (CDB) to address the Army's comprehensive data needs in both a secure and unclassified environment. The CDB will permit the integration, coordination and synchronization of shared data required by Army personnel to do their jobs. The goal is to create a centrally controlled, but physically distributed, data base which contains accurate data and provides decision makers with access to organization-wide information. The CDB will permit logically, functionally and geographically integrated views of the contained data.

This major effort will be evolutionary and will take many years to complete. Thus far, an Army data management plan has been written which guides the development of the CDB in three realistic phases.

The creation of the CDB begins with the use of data base management system (DBMS) technology to separate the application program from the data. Data element standardization, which is vital to this effort, is taking place. Other steps in the development of the CDB include the creation of a data base management systems forum to discuss Army data base issues, the start of a data encyclopedia for the entire CDB and the establishment of the interim headquarters, U.S. Army, CDB.

Another exciting initiative is the teaming of the Army and its supporting industry in the Information Science Technology Assessment for Research (ISTAR) pilot project. This project seeks the cooperation and assistance of the information industry, other government agencies and universities to maintain a technologically up-to-date Army information system.

Since information technology is expanding rapidly and in a highly diversified way, special effort is needed to keep abreast of developments. The goal is to maintain technological currency, avoid obsolescence and provide a method for incorporating improved technology in existing systems without disrupting information support to the Army.

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Artificial intelligence (AI) is one of the ey technologies to support decision mak- g in the future. The field provides many chniques to manipulate knowledge for mputer problem solving.

The capabilities provided by AI techniques allow the Army to build a new generation of powerful and flexle decision support systems. The Army's rtificial Intelligence Center is working integrate with, and build upon, the my corporate data base, Army decision pport systems and organization integran initiatives. The center's goal is to prove the way the Army uses informan to decide business issues.

The center has three ongoing initiaes:

- Development of an equipment disbution plan generator. A system for l tank fielding has already been proto-ed, and work is under way on a sys- for communications-electronics equipnt fielding.
- The integration of support functions into distribution planning. Rather than consider the distribution of equipment in isolation, the systems will take into consideration personnel and logistics. This system allows the planner to understand the side actions that must take place when distributing equipment and the implications of making changes to the original plan.
- The center is using the development of the AI system as a structure to study the information relationships in the Army. Out of this study will come an assessment of how well the distribution of information is integrated and what can be done to improve it. The greatest challenge for the center is to educate managers and convince them that AI is not just a novelty but a way for senior decision makers to make better decisions more effectively.

These examples are just a sample of the Army's ongoing information technology initiatives. Much has already been achieved, but we must drive forward to prepare for the future. The next generation of Army equipment should provide these advanced capabilities:

- Compatible, distributed, modular operating systems—possibly hardware independent—that will optimize interactive, batch, input-output and telecommunications processing.
- An integrated voice, video and data processing system that will integrate input, processing, output, audiovisual and document publication adapted to extensive user-machine interaction.
- Compatible, distributed data base management systems capable of linking elements of the Army corporate data base and utilizing some forms of machine intelligence and expert systems.
- Capability to up and download information and data through a variety of computer sizes from microcomputers to supercomputers and through a variety of communications systems and protocols.
- Multilevel secure computing and communications at moderate cost.
- Improvements in processor speed, main-memory access, mass storage systems and communications throughout to support the capabilities listed above.

Along with concern for information technology advances, the Army has responsibility to monitor associated resources carefully. Economies and efficiencies will be achieved by implementing information management improvements, including the information architecture, standardization, life-cycle management and central approval of information management plans. The centralized review and approval of plans will permit priority support for initiatives with the largest return on investment while accomplishing the mission.

The Army's ultimate information management goal is to provide the uninterrupted flow of information in peacetime, transition to war and wartime. The information management program designed to achieve this goal is in place; the challenge is to ensure its smooth execution.

We have the opportunity to make a substantial contribution to improved Army readiness while we spend taxpayer dollars in a cost-effective manner. The Army has employed advanced planning techniques to ensure that we will be responsive to the Army's current and future information needs. To remain current, the Army is staying in the forefront of information technology advances and will capitalize on all opportunities to improve operations. The future is coming and the Army will be ready.





Above, 24th Infantry Division (Mechanized) soldiers familiarize themselves with the new tactical Army combat service support computer system (TACCS) before user testing at Ft. Stewart, Ga. Left, the Army's single-channel ground and airborne radio system (SINCGARS) is used in the field for command and control communications from platoon through division level.

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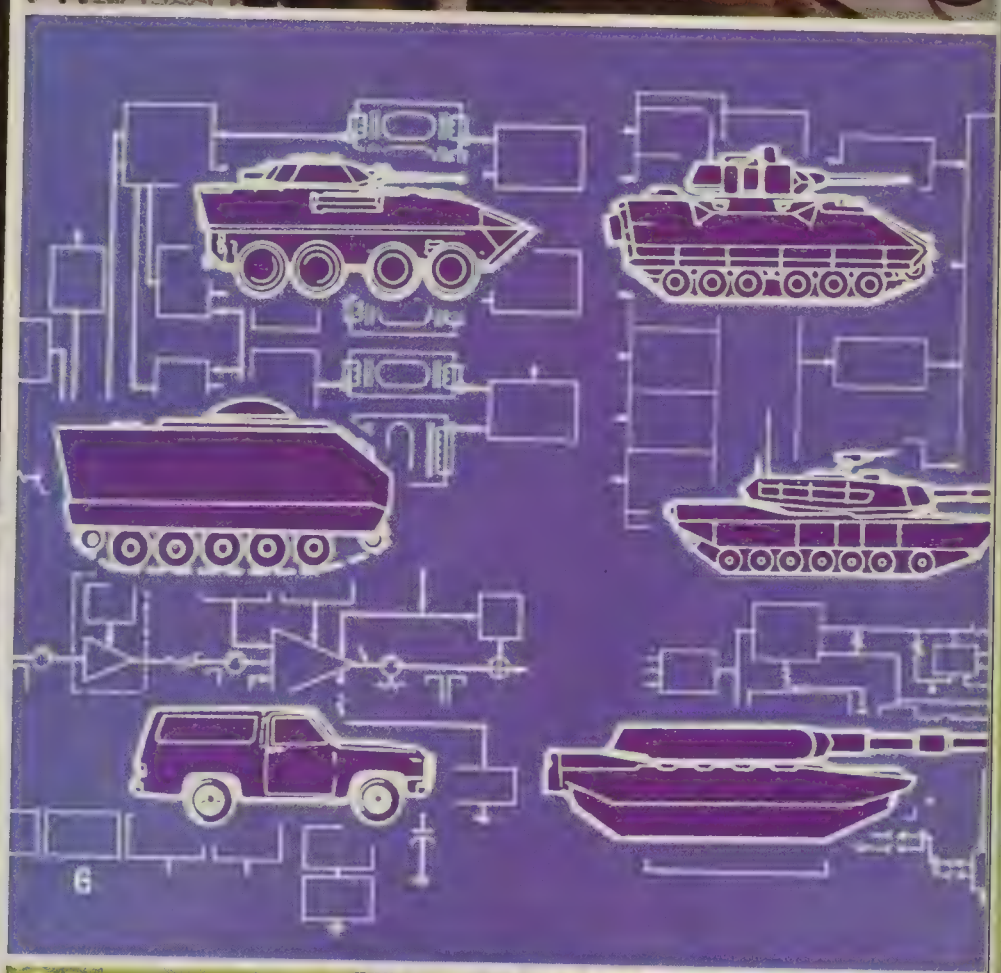
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5. TCAC 6. VETRONICS 7. MISS







6





7

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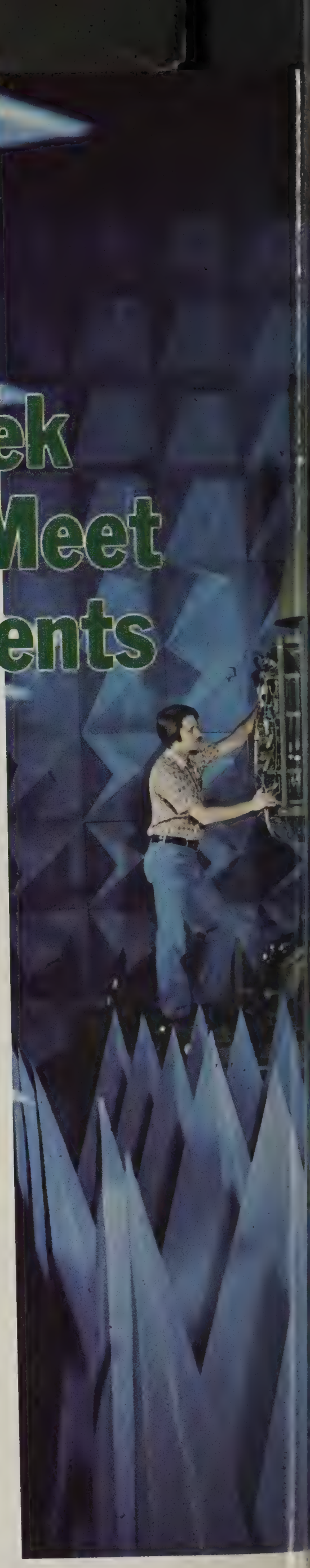
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Army Civilians Seek 'Better Ways' to Meet Mission Requirements



Progressive change is still the hallmark of the Army's civilian personnel system, which features decentralized management, backed up by collective planning, training and support.

By Raymond J. Sumser
Director of Civilian Personnel

The "Year of Leadership" demands that we reflect on Army leadership of our civilian work force of over 450,000 skilled, loyal men and women. Our experience, past and present, bears witness to the fact that better ways always can be found—better ways to organize and staff to meet the Army's mission requirements, better ways to manage a large and widely dispersed civilian work force and better ways to promote the efficiency and welfare of our civilian employees and their families.

Making better things happen does take leadership. It took some strong leadership in the past to advance the art of civilian personnel management to where it is today. It will take even more in the future as the Army becomes increasingly

An Army civilian engineer prepares a 'Teampack' radar-locating system for tests in the anechoic (echoless) chamber at the Electronic Warfare Laboratory, Ft. Monmouth, N.J.

Civilian fire fighters at Seneca Army Depot, N.Y., cutting a simulated rescue path through an aircraft fuel fire during a training exercise.



dependent on highly skilled employees capable of keeping pace with rapidly advancing technologies.

A look at history may clarify our perspective on where we are now and where we are going in the future. In the years preceding World War II, the War Department had developed neither a personnel management program in any real sense of the word, nor any conscious recognition of the need for a formalized program to manage the 70,000 people making up the civilian component of the department. Personnel transactions were approved centrally in Washington, D.C., and little authority was delegated to commanders in the field. The secretary of war first established the position of director of civilian personnel in September 1939.

The declaration of an emergency in 1939, as a result of war conditions in Europe, caused a rapid increase in the size of the department and gave impetus to the establishment of a positive civilian personnel program. By the end of 1939, the number of civilian employees had increased to well over 100,000. The passage of the Selective Training and Service Act of 1940, calling for a peacetime draft for one year of service in the Army, meant additional expansions in all of the department's establishments to induct, clothe, house, train and maintain the hundreds of thousands of new military personnel.

The continued increase in the size of the department caused the existing personnel system to strain at the seams, and

within one year after his appointment, the new director of civilian personnel began formulating plans for organizational and procedural changes to meet these new developments.

Perhaps the most significant change—one that remains the cornerstone of system design to this day—was decentralization. Nineteen civilian personnel field offices were established to expedite the recruitment of civilian personnel; approve appointment, promotion, transfer and separation actions; approve position classifications; serve as advisers to field commanders and supervisors on personnel management; report to the secretary of war on the status of civilian personnel; respond to public inquiries concerning any matter related to civilian personnel; and operate generally as a liaison agency between the War Department and the Civil Service Commission (now the Office of Personnel Management [OPM]).

The field offices provided a marked improvement. Actions were speeded up; decisions were more valid because the approving offices were nearer to the operating stations. The consulting and coordinating activities of the offices helped supervisors improve the management and leadership of civilian personnel.

In March 1941, Lawrence A. Appley, a leader in industrial personnel management, was appointed as an expert consultant on personnel management to the secretary of war. His greatest contribution was in obtaining recognition of the need for a more dynamic concept of personnel management.

This consultant and William H. Kushnick, the director of civilian personnel, took the position (well established today) that the control of the human element was a major management responsibility of the supervisor, and that management had to have authority commensurate with that responsibility. They proposed that the secretary of war delegate complete authority to the lowest practicable level of management, develop top staff leadership and adequate administrative controls and then hold officials at the operating level fully responsible, subject only to certain postaudit reviews.

In August 1942, the secretary of war announced the complete decentralization of personnel authority to the lowest practicable operating echelon. His decision provided the basis for simple, direct procedures for accomplishing personnel transactions, the location of authority to act where responsibility for achievement rested and aggressive leadership in the development of the personnel management concept in the War Department. At the time, this decentralization was considered the most extensive in the federal service.

Over the years, since decentralization, many program and system changes have been introduced to make things better for the commanders and supervisors—the department's real personnel managers.

One of the most significant changes was the organization of certain related occupations into formal career programs to systematize the process of acquiring, training and managing civilian employees in key occupational groupings. As described in the 1984–85 *Green Book*, the career programs provide a basis for meeting Army-wide staffing needs and affording opportunities, well beyond those of their current employing installations, for well-qualified employees.

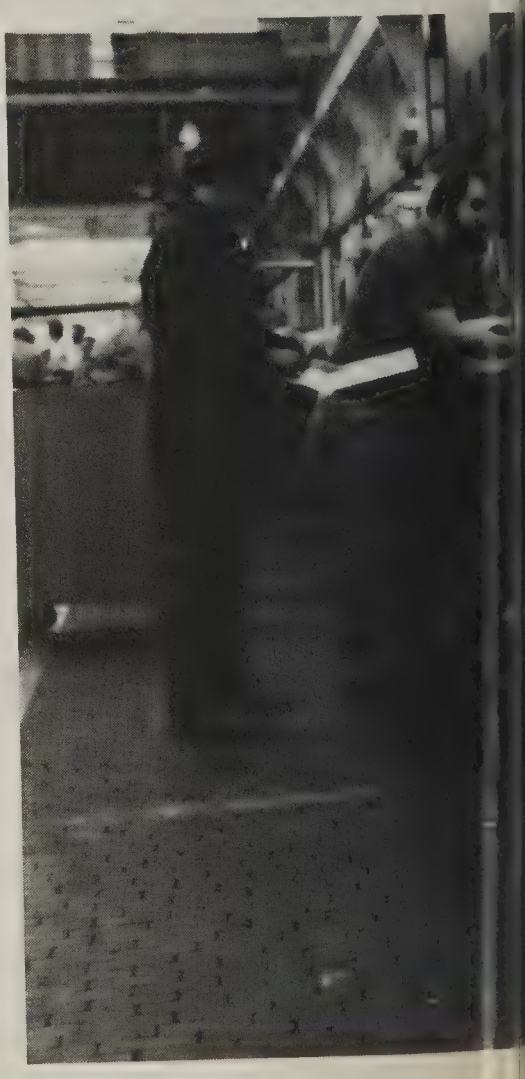
The first occupation included in 1920 was ammunition inspection. Today, career programs have expanded to 22 career fields with a population of 94,300 employees, and include occupations such as science and engineering, supply management, quality assurance and automated data processing.

In 1978, the Department of the Army took another significant step by establ s ing the civilian training, education a development program (CTED). CTED e sures the availability of central resourc to develop entry-level interns into a ca of skilled professionals and future ma agers.

The program trains new personnel assume key positions quickly, improv the executive and management capab ties of the current work force and dev ops apprentices for specialized-facilit engineering positions. The CTED progr provides a pipeline of competent empl ees who are abreast of new developme in technology and who have a full und standing of the current knowledge, sk and abilities required to meet the Arm current and future civilian staffing ne at both the journeyman worker and m agerial levels.

The quest for better ways of do things continues today. Initiatives s as the following represent the type of provements the Army is pursuing to sure that commanders and supervisor the field continue to be equipped wit progressive civilian personnel mana ment system which meets their needs the needs of the civilian employees t manage.

Family members possess many v able skills needed to carry out the Ar worldwide mission. Almost 50 percer the spouses of our military and civ members work. Estimates indicate

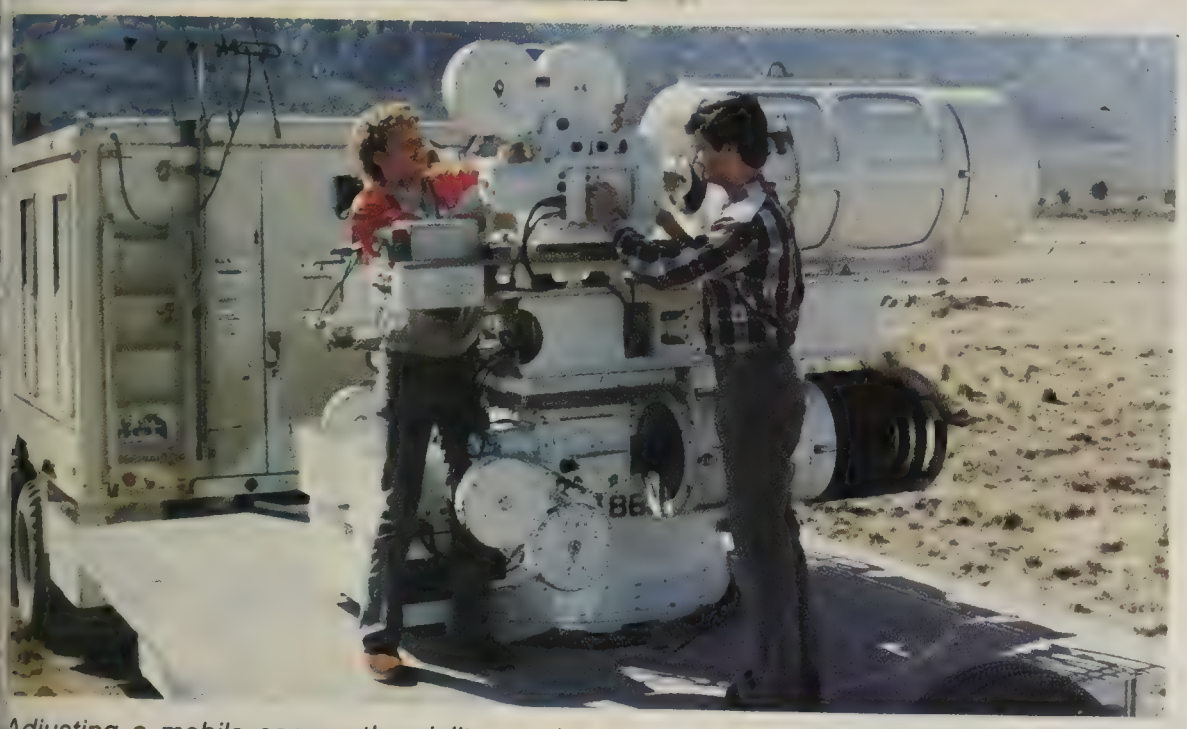




RAYMOND J. SUMSER has served as the Army's director of civilian personnel since January 1982 and, since December 1983, has served in a dual capacity as the assistant for civilian personnel management to the assistant secretary of the Army (Manpower and Reserve Affairs). He served as principal deputy assistant secretary for personnel administration at the Department of Health and Human Services (1980–81); as director of personnel for NASA from 1973–76; and has held other high administrative posts in the Department of Health, Education and Welfare and the Department of Labor. A retired commander in the U.S. Naval Reserve, Mr. Sumser was a Navy multiengine pilot from 1952 to 1959. He is a native of North Canton, Ohio, holds a bachelor of arts degree from the University of Utah, was a Mid-Career Fellow at Princeton University's Woodrow Wilson School of Public and International Affairs, and has done graduate work at the University of Washington and George Washington University.



A civilian heavy equipment repairman works on a tank's running gear at Ft. Knox, Ky.



Adjusting a mobile camera-theodolite used in testing at White Sands Missile Range, N.M., are civilian engineer Victor Dixon (right) *and Phillip Simpson, an engineering student from Georgia Tech on a cooperative education program.*

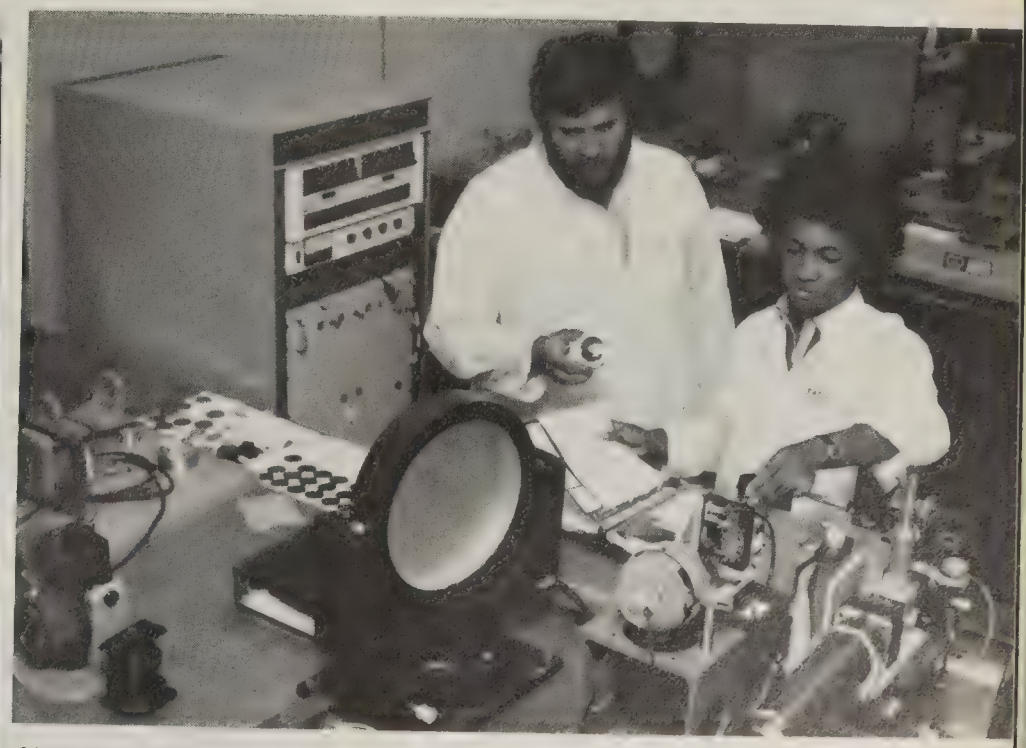
Army spouses contribute 33 percent of the family income. But family members often face substantial personal stress and financial hardship because of the difficulty in maintaining continuity in employment when the service member or civilian employee is reassigned from one duty station to another.

In recognition of these realities and the belief that family member satisfaction has a profound effect on the Army's ability to recruit and retain military and civilian personnel, the Army embarked on an ambitious program to expand employment services. Employment issues such as the following have been addressed in the Army family action plan, and supporting initiatives have been implemented:

■ An 18-month "Army priority placement program" test was initiated in September 1983 and concluded in March 1985. The test sought to enhance family member employment assistance by providing a systematic means of referral and placement for those Army family members employed by the Army who accompanied their sponsors on a permanent move within the continental United States and who registered for assistance in finding Army employment at the new post.

As of 31 January, 1985, there had been 285 placements, or 72 percent of those registered. Based on the success of the test, the Army recommended to the secretary of defense that the program be continued on a permanent basis and ex-





Above, Jeff Gunderson and Barbara Pace, civilian technicians at Sacramento Army Depot, Calif., align the visual collimator of a tank thermal-imaging sight in the depot's electro-optics branch.

A quality control inspector uses a laser device to measure the bore of a M68 105-mm tank gun tube fresh from the production line at Watervliet Arsenal, N.Y.

When mission accomplishment is the order of the day, you cannot afford to be immobile.

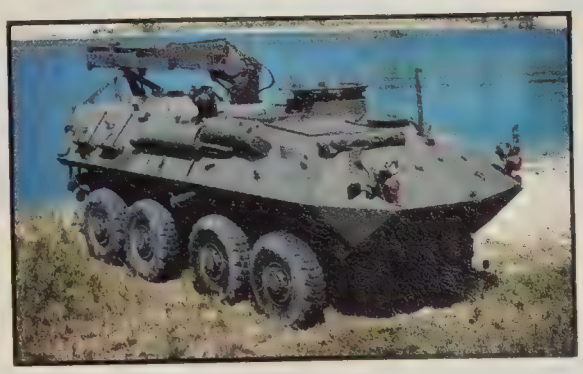


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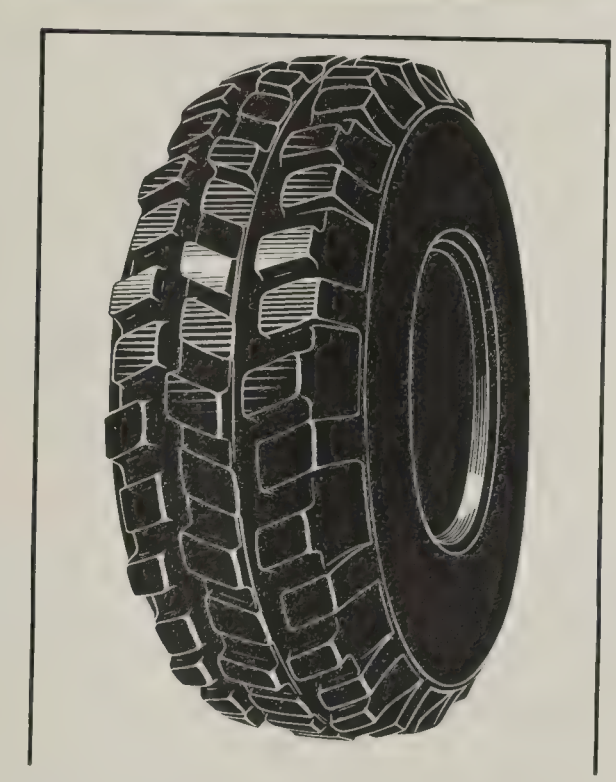
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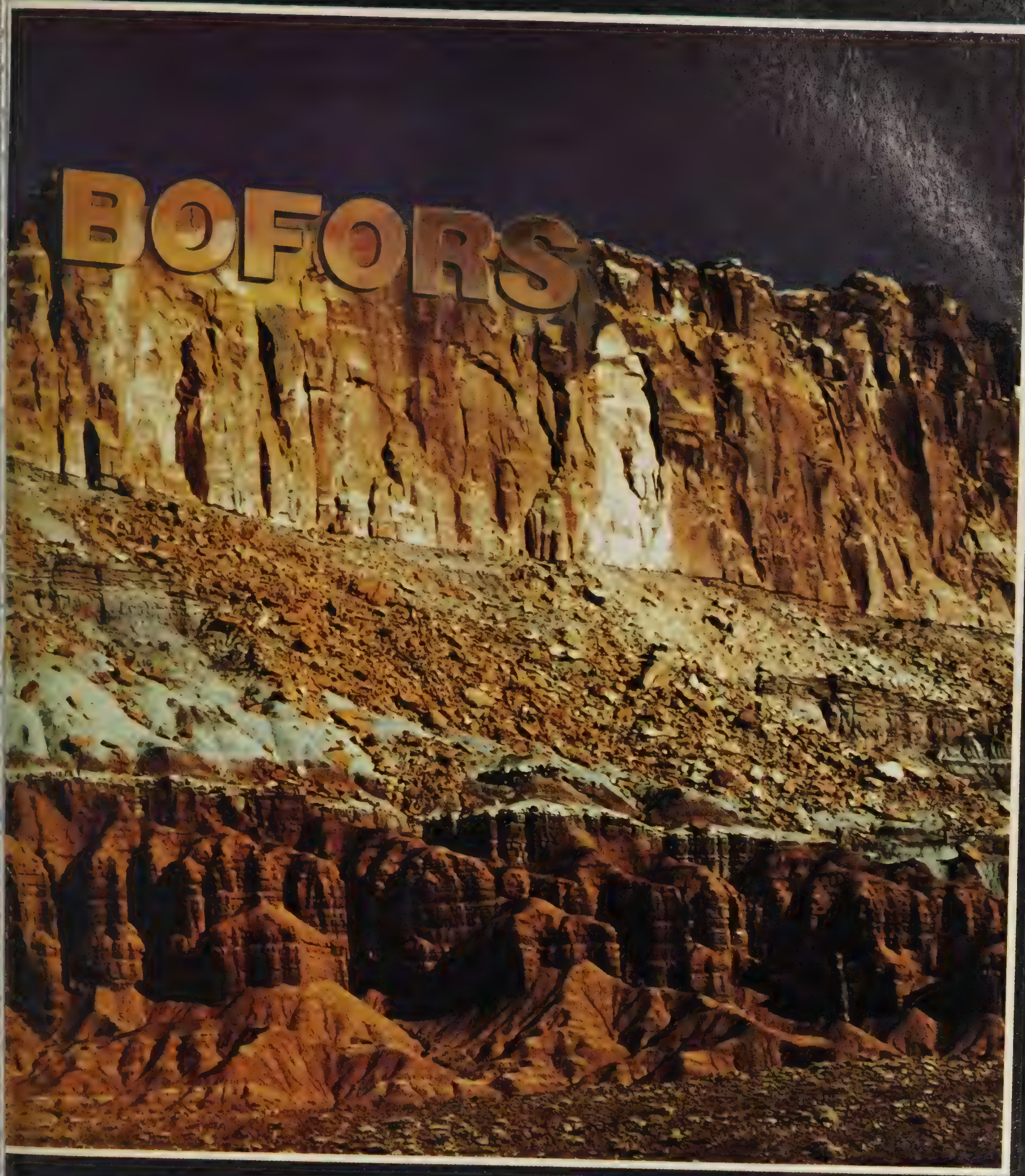
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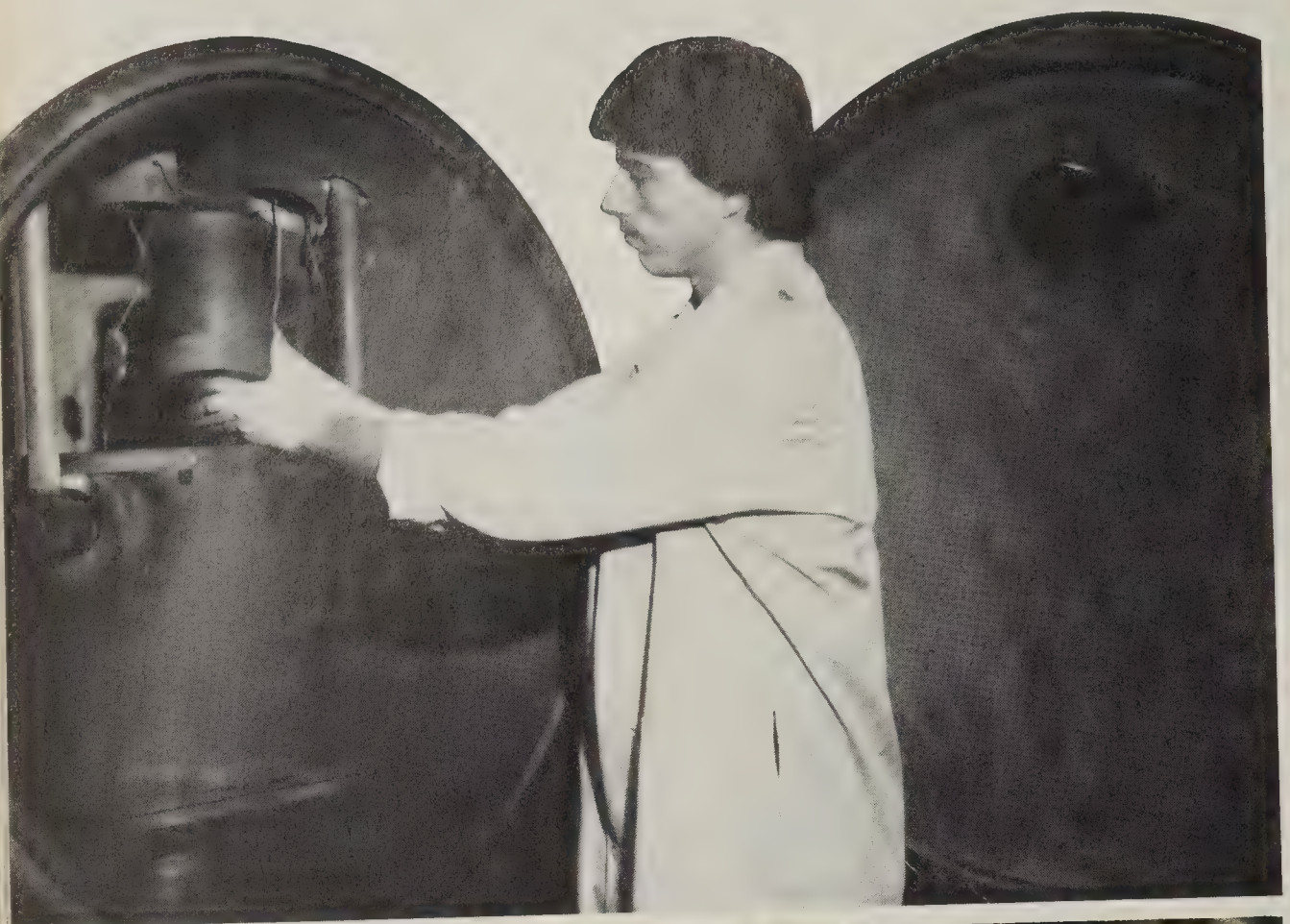
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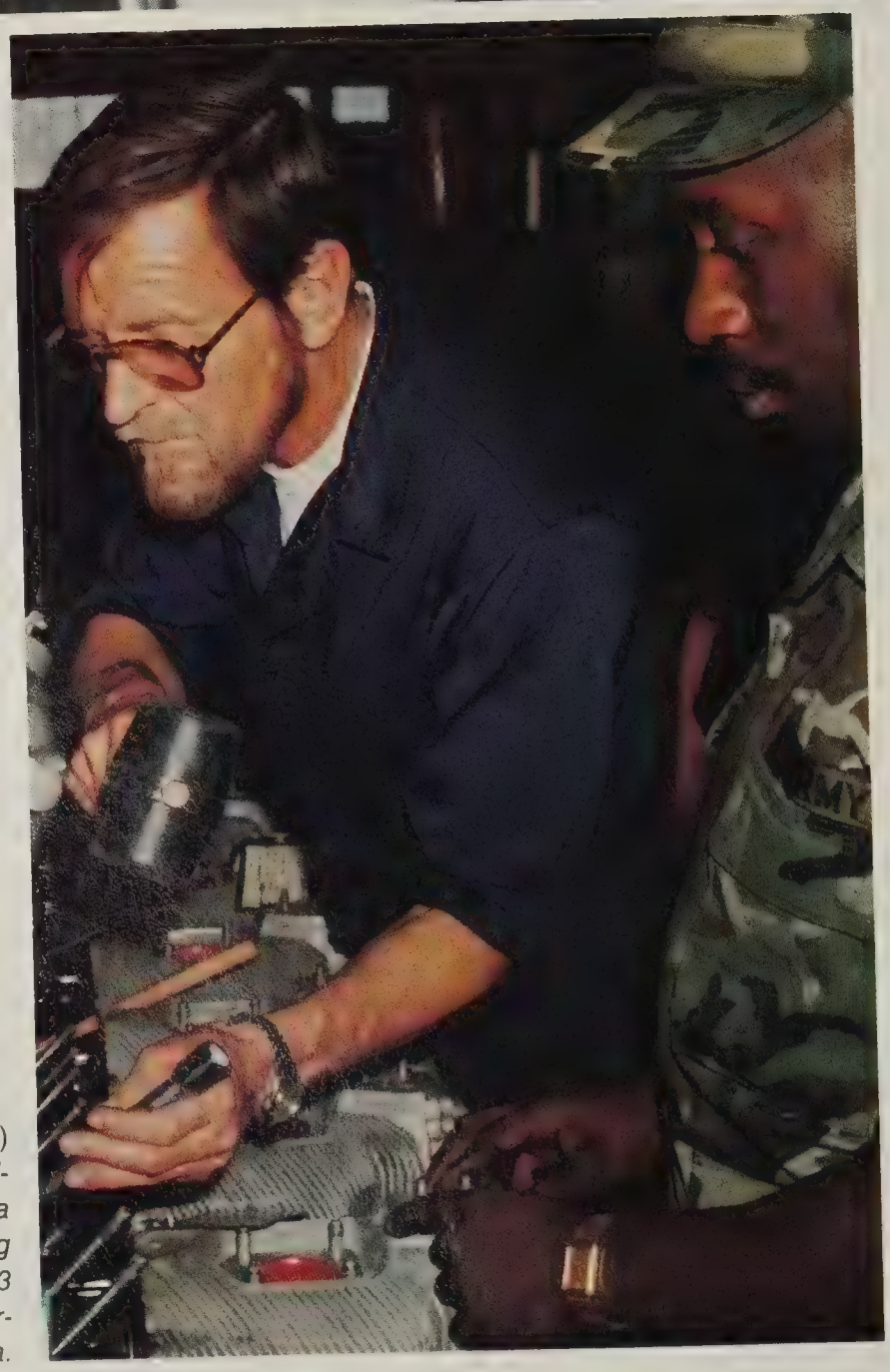
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Officers of the Berlin Brigade are briefed on a new table-top war game for urban combat by a combined civilian-military team from the Army's Systems Analysis Activity, White Sands Missile Range, N.M.





Above, a civilian engineer removes a forging die from a vacuum hot press at the Army's Materials and Mechanics Research Center, Watertown, Mass.



Owen Holbrook (left) *and Pfc. Willie Williams work on a diesel engine being rebuilt for an M60A3 tank at Anniston Army Depot, Ala.*

panded to include Alaska and Hawaii March 1985, the program, unique to Army in the federal government, beca a permanent part of Army's package family assistance programs.

■ Executive order 12362 (Appointm of Former Overseas Employees) perm noncompetitive appointment in the c tinental United States of eligible fam members after they have served in o seas local-hire appointments. Our qua ly reports show that 1,482 Army appo ments had been made as of 31 Ma 1985. This is nearly 60 percent of the pointments made through the execu order by all federal agencies—a prime ample of Army leadership.

■ In another initiative unique to Army, one-stop employment centers being established where needed to m it easier for family members to find which government and private-sector are available in the area and to appl them. The one-stop center does thi bringing together representatives an formation from nearly all local area ployers at one location on an A installation.

These centers, so far entirely pai by local installation funds, are an att to provide a standardized, cost-effe program to furnish timely and acc employment information and suppo services to family members. The



l was to establish 10 such centers by end of December 1984. By November 4, there were 11 centers operational. additional 23 centers are being devel- d, with 13 having been projected to n during fiscal 1985. Army community ice volunteers, civilian personnel of- (CPO) employees and employer rep- ntatives are working together to make -stop centers a model of employment stance.

ntil 1982, when we began to place ial emphasis on reducing the costs of viding medical care and compensation ivilian employees injured on the job, e costs had been rising 12 percent or e each year. In contrast, the costs in and 1984 rose only 7 and 6.3 per- respectively. The 1985 costs, based he first two quarters, were up only lt 4 percent.

ese lower rates of growth are attrib- partly to lower cost-of-living in- es but even more to aggressive lead- p by commanders in the manage- of the injury compensation program, idden side of occupational accidents. ite of those efforts, our current bill ds out at $91 million annually.

mpensation payments to over 4,000 iduals on the periodic (long-term) represent two-thirds or $61 million e Army's total injury compensation Two major actions have been taken to address this serious problem.

A goal was established to reemploy ten percent of those individuals on the periodic rolls in fiscal 1984. Second, a pilot reemployment project was conducted at Tobyhanna Army Depot, Pa. This project, a cooperative effort with the Department of Labor, Office of Workers' Compensation Programs, netted a lifetime savings of $4 million and demonstrated that it is possible to reduce costs with an effective reemployment program. The results of the Tobyhanna project will be provided to Army major commands this year for their use as a model in developing similar reemployment initiatives.

Army disciplinary standards were revised in June to make it unmistakably clear that this department does not tolerate fraud, theft or intentionally dishonest conduct by its employees. Employees engaging in such conduct, while few in numbers, tarnish the image of the overwhelming majority who are honest and hardworking. When identified, they will be considered for removal from the federal service unless there are justifiable, mitigating circumstances.

Other changes include provisions for distinguishing between behavioral offenses for which progressive discipline is appropriate and those offenses which warrant punishment; a requirement that all proposed formal disciplinary actions be coordinated with the labor counselor; and stiffer penalties when the employee has been disciplined previously.

A new directive issued recently by the secretary of defense permits DoD (Department of Defense) components to establish drug abuse testing programs for civilian employees in certain "critical" jobs. By definition, critical jobs are those in law enforcement, positions involving the national security or the internal security of the Department of Defense and positions involving the protection of property or persons from harm. This new policy will permit preemployment and periodic urinalysis of limited numbers of civilian employees who work in mission-essential jobs within these categories.

The civilian personnel office technology project is designed to streamline operations in CPOs by equipping them with modern office equipment and automating some of the administrative functions. Office automation equipment and services—"answer phones," microfiche subscription service, word processors and copiers—have been procured centrally with productivity investment funds from the Office of the Secretary of Defense (OSD). This new equipment will make it possible for Army CPOs to be more responsive to the support needs of management officials and employees and will reduce CPO manpower requirements.

The Army civilian personnel system (ACPERS) is under development as a standard Army management information system. When fully fielded in 1988, ACPERS will replace all existing civilian personnel systems currently being operated by the Army.

The system will provide worldwide support of civilian personnel management during peacetime, mobilization and wartime. It will also provide an automated interface with DoD, OPM and automated manpower, civilian pay, and finance systems. ACPERS will allow the updating and extracting of data via remote terminals. This use of technology will provide for extrapolation of data to fully support management decision-making processes.

The automated Army civilian training, education and development system (ACTEDS) will be phased into all career programs by fiscal 1990 to tighten the current system for training and developing the professional competency of employees in the Army's career programs. Paralleling the Army's officer training system, ACTEDS will provide job element-related training, when and where it is needed, for each level of development, from intern to the Senior Executive Service (SES).

ACTEDS innovations will include the introduction of leadership training at the intern level and multidisciplinary development at the GS12 through GS15 (general schedule) grade levels, to develop a cadre of high-potential employees to directly support our civilian executive structure. The logistics and acquisition management program (LOGAMP) is the ACTEDS pilot effort and covers six career areas—supply, material maintenance management, contracting and acquisition, quality and reliability assurance, engineers and scientists, and transportation management.

This three-part pilot program was implemented in 1984 with 192 employees initially selected to participate. Part I addresses the need for all employees in the covered career programs in grades 5 through 12 to develop the multifunctional knowledge and managerial base required by the logistics and acquisition management mission. Part II provides for competitive selection of high-potential employees in grades 13 through 15 for broad multidisciplinary training and develop-

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ment assignments involving the logistics and acquisition process. Part III deals with the staffing of designated key LOGAMP positions at the grades 14, 15 and SES levels.

To date, 307 key positions have been identified—including 207 in the Army Materiel Command and 36 in other commands and Headquarters, Department of the Army (HQDA). A LOGAMP working group is developing a core curriculum of training and development for the program.

Civilian employees who support critical systems overseas during crisis or war conditions are vital to mobilization plans. Until July 1983, when HQDA developed and promulgated a policy to assure the retention of emergency-essential employees overseas, there was no means of determining who would remain on the job after other noncombatants were evacuated.

The major provision of the 1983 policy is the requirement that all civilian employees serving in or being considered for assignment to emergency-essential positions sign an agreement to remain on the job in the event of crisis situations or war. Individuals who decline to sign an agreement are not permitted to remain in, or be assigned to, an emergency-essential position. As of December 1984, 2,152 positions were identified as emergency-essential, and only 63 individuals had declined to sign an agreement.

In June 1982, Headquarters, Military Traffic Management Command (MTMC), began planning for a system to utilize retired civil service employees at MTMC activities during mobilization, based on retiree data tapes from OPM. In 1983, Army Forces Command (FORSCOM) initiated similar planning, as executive agent for HQDA, to develop and test a system for eventual Army-wide use. In November 1984, MTMC and FORSCOM tested their systems and reported the results to HQDA. A total of 18,757 retirees were contacted. Of these, 3,815 indicated that they would be available for reemployment in the event of mobilization.



Yong Spalding, a civilian attendant, helps a child with a meal at the day care center in the Sagamihara family housing area, Camp Zama, Japan.



Rhonda Thomas (below, right), an Army Community Service volunteer, helps Joanne Hammond with a job prospect at the civilian employment counseling center, Sacramento Army Depot, Calif.

The Army's success in this test project prompted OSD to adopt a similar system DoD-wide. The Defense Manpower Data Center (DMDC) will now provide data on DoD civilian retirees, annually, to all civilian personnel offices in the United States. The first increment of data was sent to Army CPOs in January. Data on 55,683 retirees were furnished Army-wide. Army CPOs have begun contacting these retirees and are matching their qualifications against vacant mobilization positions.

In this era of tighter budgets and other constraints on resources, the leader of tomorrow will have to be more and more dependent on the Army's greatest resource: its people. To use civilian resources effectively, commanders and supervisors must be equipped with a personnel system that provides a level of service and support which enables them to motivate their employees to work at their maximum capability.

That takes leadership at all levels to ensure that systems are in place for equitably distributing and structuring the work load; giving each employee the training he or she needs to strengthen skills, knowledge and creativity; thoughtfully planning and appraising each employee's performance; rewarding those who merit it; and taking disciplinary action when such action is warranted. In our decentralized system, the CPO is there to help commanders and supervisors carry out their personnel management responsibilities—to make better things happen with people.

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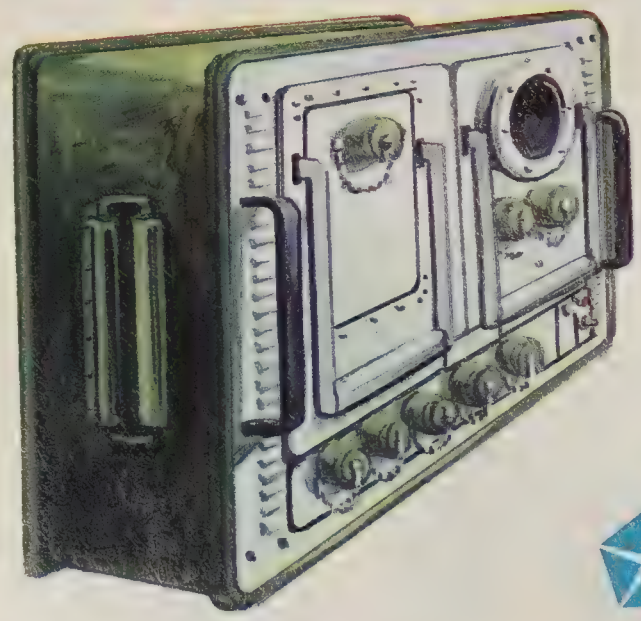
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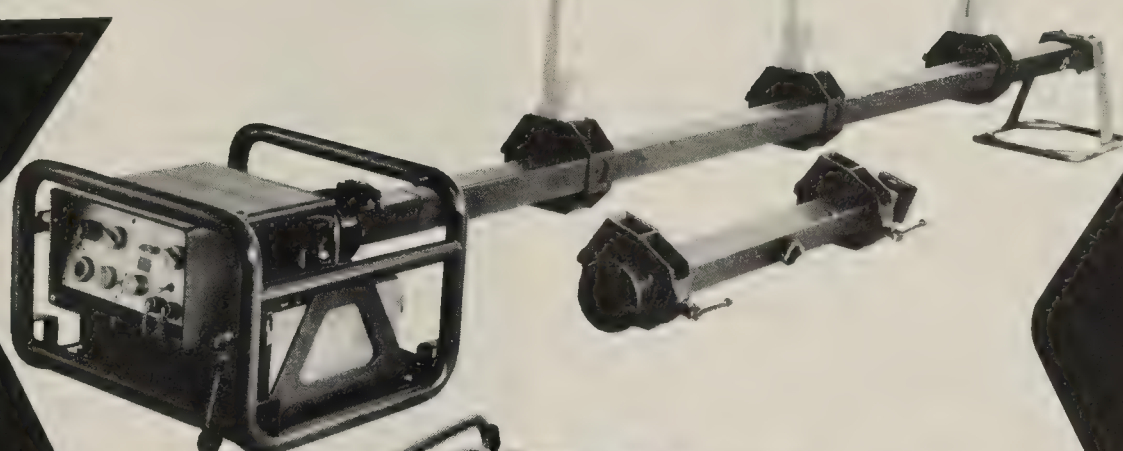
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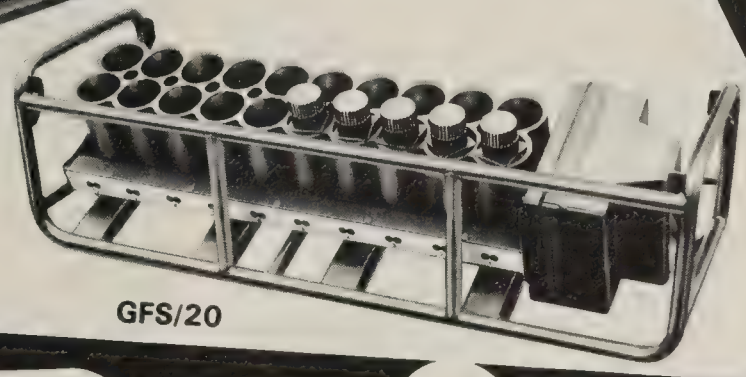
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Community and Family Support Center

Helping Make Things Happen At Army's Installation Level

The U.S. Army Community and Family Support Center (CFSC) was established 23 November, 1984, as a Department of the Army (DA) field operating agency dedicated to helping commanders make life better for the Army family. Within policy guidelines established by the Army's deputy chief of staff for personnel (DCSPER) and his director of human resources development, the center helps commanders make things happen at installation level.

Its focus is toward the field rather than toward the DA staff, and its operations are geared to the philosophy that commanders of the Army are the ultimate guarantors of the Army family's aspirations—but that there are things that commanders cannot do without help.

Whether "help" means money, training, expert advice or central coordination of Army-wide programs, the center exists to try to provide it; in effect, CFSC is the apex of a network of community-oriented staffs at installation and major command level.

This is an interface that the Army leadership never had before—not that the DPCA (director of personnel and community activities) at community or installation level had no one at DA level to interact with on operational matters—he had too many; and he lacked a central point of contact, an agency that was involved in the same range of community activities and operations that he was. That, essentially, was the void CFSC was designed to fill; its mission is to help commanders put into effect and sustain the wide-ranging initiatives embodied in the Army family action plan.

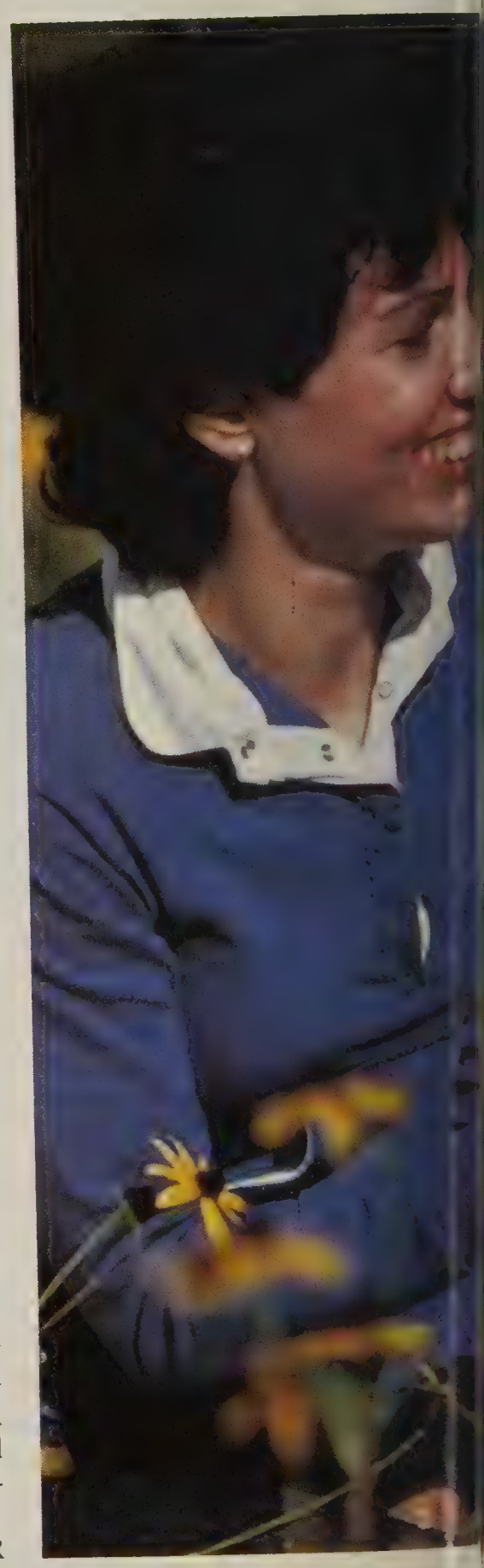
The CFSC organization reflects a marriage of programs which are supported by appropriated funds with others that operate in the commercial mode and pay their own way. The latter, loosely labeled "MWR" (morale, welfare and recreation) within the uniformed services, have more than paid their own way in recent years, and their profound capability to alter installation/community life for the better have made them an "engine" to bring the Army family programs into the twentieth century.

Yes, the Army is "in business," operating a far-flung conglomerate of clubs, hotels, golf courses, bowling centers, travel agencies, child-care centers, summer camps, health spas, tennis courts and swimming pools—whatever is legal and acceptable to the nonappropriated funds (NAF) panel of the House Armed Services Committee, which conducts continuing close oversight of our programs, and whatever the imagination of DPCAs around the world have conceived as enhancing the aspirations of their communities.

The Army is actually in big business with nearly $900 million in revenues last year. The story of where we started, how we have reached this point and the potential of the MWR engine to help make life better for the Army family underlie its keystone role in CFSC operations.

In order to become the major building block in the creation of the Community and Family Support Center, the MWR program had to get its act together and get itself oriented to serving the needs of the Army family around the world. Before 1980, the NAF program, which fueled MWR, was run very much like the appropriated-funds programs of the services; that is, the installations, communities and major commands of the Army laid financial claims on the headquarters by a NAF planning, programming and budgeting process. Even though many MWR operations were essentially commercial in nature, they were not, strictly speaking, operated against a bottom line.

The prevailing philosophy of MWR



By Maj. Gen. Robert M. Joyce
Commanding General,
U.S. Army Community and Family
Support Center

This field operating agency is 'geared to the philosophy that commanders . . . are the ultimate guarantors of the Army family's aspirations—but that there are things that commanders cannot do without help.'



Photo: Frederick Sutter

was that the soldiers and families of the Army needed to be provided a range of services, ideally at minimum cost without regard for profit or loss considerations.

Generally, only the Army club systems were held to performance versus budget, and that, more than anything else, was a consequence of the club scandals that occurred in the 1960s. In its financial management, what we had generally reflected more of a socialist economy within the military institution than the American free enterprise economy that existed outside the gates of our installations and communities.

There probably was nothing wrong with that, given the fact that our Army was stationed all over the world on installations small and large, adjacent to major communities and in isolated sites; and traditionally, a commander's obligation had been to take care of the needs of his troops and their families.

From the viewpoint of a newcomer in 1980, MWR was doing what it had always done in the past; but it was clear that much of our enterprise appeared to be anachronistic and frequently at odds with the reality of the demography and needs of the Army of the 1980s.

Obviously, the Army family of the 1980s was largely married, relatively sophisticated in consumer knowledge and tastes, and mobile. These factors generally led the observer to conclude that, except for isolated sites, MWR no longer had a captive audience: no more squad barracks with an NCOIC (noncommissioned officer in charge) living at the end of the hall, no more $21-a-month privates and no more farm and city boys far from home amazed at the diversity of goods and services available out in the larger world of the Army installations.

What our new soldiers were seeing was not the exciting civilian, commercial and

recreational environment they had experienced first-hand or on television, but a secular enterprise, geared toward provision of mass services rather than quality and conducted in a dilapidated physical plant.

The latter condition had been a common experience to the old soldiers and the old families. All of us had been raised in an Army of converted hangars used as gymnasiums, converted barracks for youth activity centers, and in a variety of World War II structures, including even prewar stables, adapted for use as bowling centers, clubs and the entire range of facilities in which our business operations were conducted.

Regardless of what we might do to professionalize the delivery of services, as long as we remained anchored to our deteriorating physical plant, our chances to design an MWR program appropriate to the American Army family of the 1980s and beyond seemed slim indeed. In the argot of business, we were capital poor and, unless we profoundly altered some of our accustomed ways of doing business, we appeared doomed to stay that way.

Quite simply, the defense appropriation process never stretched quite far enough to keep our MWR program going in first-class facilities; and even though our predecessors in the Army leadership never doubted the importance of taking care of the Army family, the war-fighting capabilities had to be funded.

You can bowl off duty in a converted World War II barracks, but you cannot win the AirLand Battle with armaments of that same vintage. The Army did what it had to do and we lived. However, none of us has ever had any illusions that the MWR physical plant was really first class, in the sense that we have seen the growth of modern recreational plants and services throughout the United States during the last generation.

Facing growing pressures from all the services for new community facilities of all types, the House/Senate joint conference report on the fiscal 1980 Defense Authorization Act directed the Department of Defense (DoD) to come up with a coherent policy, for all the services, which defined which MWR facilities were legitimate taxpayer responsibilities (APF—appropriated funds) and which the services ought to fund themselves from the proceeds of their business operations (NAF).

Congress's call for such a policy, which definitely inspired widespread dismay at its outset, has proven over time to be the single most important and positive factor in modernizing our MWR program during the last five years.

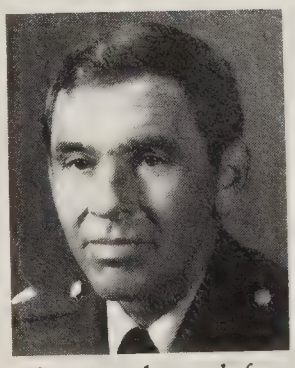
Before 1980, the services had submitted a mixed bag of requirements to Congress for funding; some sought, for exampl to build clubs with APF, some to bui gymnasiums and child-care centers wi NAF. The simple and common answer a service request for construction fundi of a given facility was, "the (Army/N vy/Air Force/Marine Corps) funds thei with NAF"—a certain formula for disa ray and attendant lack of funding su port.

The DoD policy arrived at in coor nation with all the services generally f lowed the philosophy that the kinds things which are normally taxpayer sponsibilities in the larger American so ety (recreation centers, gymnasiums, co munity centers and the like) should funded by APF and that those facilit normally funded by entrepreneurial ca tal (revenue-generating facilities capa of paying a return on investment, l clubs, bowling centers and the like) m be funded by the services with nonapp priated funds (NAF).

Emergence of the DoD construct



Child-care centers (above and right), *part of the Army's MWR (morale, welfare and recreation) program, are vitall important to the Army family.*



MAJ. GEN. ROBERT M. JOYCE became the first commanding general of the Army Community and Family Support Center with the center's formation in November 1984. He had previously served as The Adjutant General of the Army and commanding general of the Adjutant General Center from July 1981. A 1953 graduate of the U.S. Military Academy, he holds a master's degree in business administration from George Washington University and is a graduate of the advanced management program at the University of Southern California. Gen. Joyce also graduated from the Armed Forces Staff College and the Industrial College of the Armed Forces. Originally commissioned as a field artillery officer, he has held a variety of administrative and personnel posts, including: deputy The Adjutant General of the Army; adjutant general of U.S. Army, Europe, and commander of its 1st Personnel Command; and chief of staff of the Army Military Personnel Center. During the Vietnam war, in which he was wounded, Gen. Joyce was adjutant general of the 1st Infantry Division and special projects officer in the Office of the Adjutant General, U.S. Military Assistance Command, Vietnam.

Figure 1. Army MWR Physical Plant Requirements

Appropriated Funds ($M)			Nonappropriated Funds ($M)		
No.	Type	Cost	No.	Type	Cost
167	Physical Fitness Centers, Gymnasiums	507	108	Athletic Fields, Centers	30
99	Child-Care Centers	216	149	Clubs	369
77	Recreation Centers	227	123	Bowling Centers	240
46	Swimming Pools	97	68	Skill Development Centers	115
52	Community Facilities	199	95	Youth Centers	158
57	Libraries	105	48	Auto Craft Shops	61
50	Education Centers	159	25	Theaters	56
3	Auditoriums	15	70	Guest Houses	140
120	Other Facilities	343	48	Unit Entertainment Centers	106
			27	Liquor Stores	27
			15	Skating Rinks (Ice & Roller)	24
			343	Other Facilities	480
671	Total	1868	1119	Total	1806

cy policed up the MWR battlefield, rly defining which kinds of facilities were going to have to fight for in the get process and which we were going ave to figure out a way to fund our-es.

o clarify the picture further, we went o the major commands and installa- and asked them how many of each (APF *vs.* NAF) of these facilities needed. The answer was staggering impact but, for the Army, it surely ked the beginning of wisdom. Figure ows the number of facilities of each which were reported as requirements. ven this clear indication of the di-sions of our mission to modernize lant, we groped for a means to be-an assault on the NAF side of the rements bill. The first major handi-confronted was the fact that, at De-nent of the Army and major com-mand (MACOM) level, the NAF program was not always a first-line effort for the Army's uniformed leadership, to the extent that its size and potential importance seemed to warrant.

The first mission was to get the Army "green-suit" leadership involved in developing and managing a modernization of the Army's NAF-funded facilities.

In late 1980, Gen. John W. Vessey Jr., then vice chief of staff of the Army, chartered the Army morale, welfare and recreation review committee (MWRRC) and tasked it to modernize the Army's MWR physical plant. Membership included the deputy chiefs of staff for personnel of the Army's major four-star commands and the Sergeant Major of the Army, who were to function as a corporate board of directors for the Army's MWR and NAF programs.

Receipt of this charter sufficed to seize the attention of the Army's uniformed leadership; and the intrinsic interest and potential inherent in the program itself have managed to enhance and sustain their participation in biannual meetings beginning in 1980, through the most recent meeting in Dallas on 15 and 16 May.

The MWRRC has turned out to be a most unique example of cooperative policy making on the part of DA and the Army's major commands. It has served to raise the level of intensity of military involvement with MWR and NAF management all the way up and down the line from the installation and community up through MACOM and Army staff to the Army Secretariat, DoD and the House Armed Services Committee.



From rather humble beginnings, during which the membership met and pondered collectively how to satisfy Gen. Vessey's charge, the education process has been continuous, and the level of sophistication of committee proceedings has greatly escalated as we forged and sustained a system for getting the needs, the points of view and proposed programs of the Army family—wherever located—integrated into the program, planning and decision process.

What we faced in 1980 was a "business" that was running about $35 to $40 million in the red; that is, the Army was spending about $350 million in APF, all of the $600 million in NAF revenues it was then generating itself and about $35 to $40 million of the dividend received from the Army and Air Force Exchange System (AAFES) annually just to break even and pay its operating expenses.

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The guest house at Ft. Benjamin Harrison, Ind., is typical of the dilapidated physical plant of Army nonappropriated funds activities, many of these being housed in converted World War II 'temporary' structures.

That left precious little for capital investment. Given the dimensions of the NAF major construction agenda, the Army faced the dispiriting task of trying to accomplish a major financing mission using only petty cash. The first meetings of the MWRRC focused on ways to increase the amount of money we would be able to apply annually against our NAF major construction requirements.

Some of the debilitating factors focused on included the diversion of appropriated funds authorized and intended to support MWR operations into other "high-priority mission needs." Across the Army, for one reason or another, we were collectively spending about $40 million annually in nonappropriated funds for things that could have been funded with APF under existing DoD and Army regulations.

The committee set out to capture that amount and return it to the NAF coffers. With the active assistance of Gen. Maxwell R. Thurman, then Army deputy chief of staff for personnel, we began the process of seeking to fund our authorized appropriated fund mission to the extent permitted by regulations with appropriated funds.

Another area the committee found rich in potential was the prospective benefit of transforming our business from operations which were loosely managed, infrequently budgeted and generally lacking in orientation toward any bottom-line considerations into either profitable or break-even operations which did not constitute a drain on Department of the Army NAF resources. First intuitively, then by constant and careful observation, we noted the appearance of a lot of slack in the way we managed our business enterprises.

Managers were not geared to focus on such normal bottom-line considerations as optimum-labor scheduling, optimum-price structures, surveys of user needs, and in general the plethora of service and profit-seeking measures employed by successful entrepreneurs in the larger society.

Without any hard substantiating data, we estimated the slack at maybe $10 million worth. We were wrong, as later postmortems showed the disparity to have been worth almost $15 million with potential for even more tightening without any degradation of services to the military community, if we really used our available resources wisely.

With these two thoughts in mind as basic, and with higher optimism than perhaps our experience should have inspired, the committee in its fourth meeting stepped off the cliff and initiated a program which was entitled "self-sufficiency."

The challenge in this program went all the way down to the level of MWR activity managers in every Army installation and community. The message to them was that, by fiscal 1984, their operatio would no longer be subsidized by fu ing from the Department of the Arm Beginning in fiscal 1984, the AAFES di dend to the Army would be set aside major NAF construction, and DA sub dies to local operations would becom thing of the past.

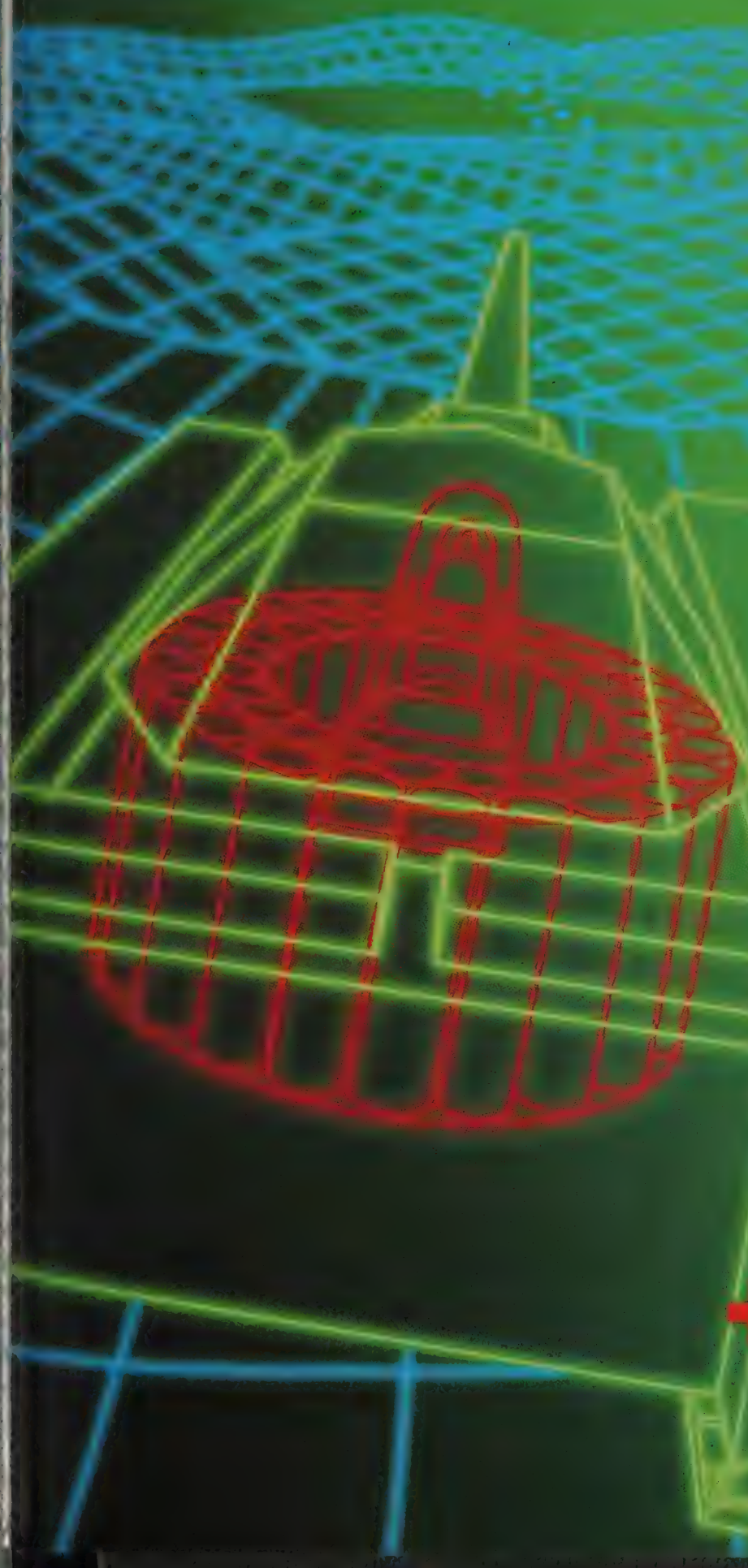
With the help of increased appro ated fund support via the "S" acco (MWR support activities funding in base operations portion of the Army erations and maintenance appropriati the installations and communities of Army would be expected to operate a totally self-sufficient basis—that is fund the entirety of their own operati costs and, a year later, their own cap purchases and minor construction.

Clearly, the MWRRC took a very h and forward-looking stance, and t fortitude was more than rewarded. initial expressions of disbelief and dis from installations and communities w over a year's period, gradually begin to be replaced by a new confidence acceptance of challenge on the par the MWR work force.

The Army as a whole reached self ficiency in fiscal 1983, one full year a of the committee's very optimistic ho When we gathered for our semian meetings in 1982, we began to wo how we might actively exploit the po tial of this work force which appe capable of a great deal better man

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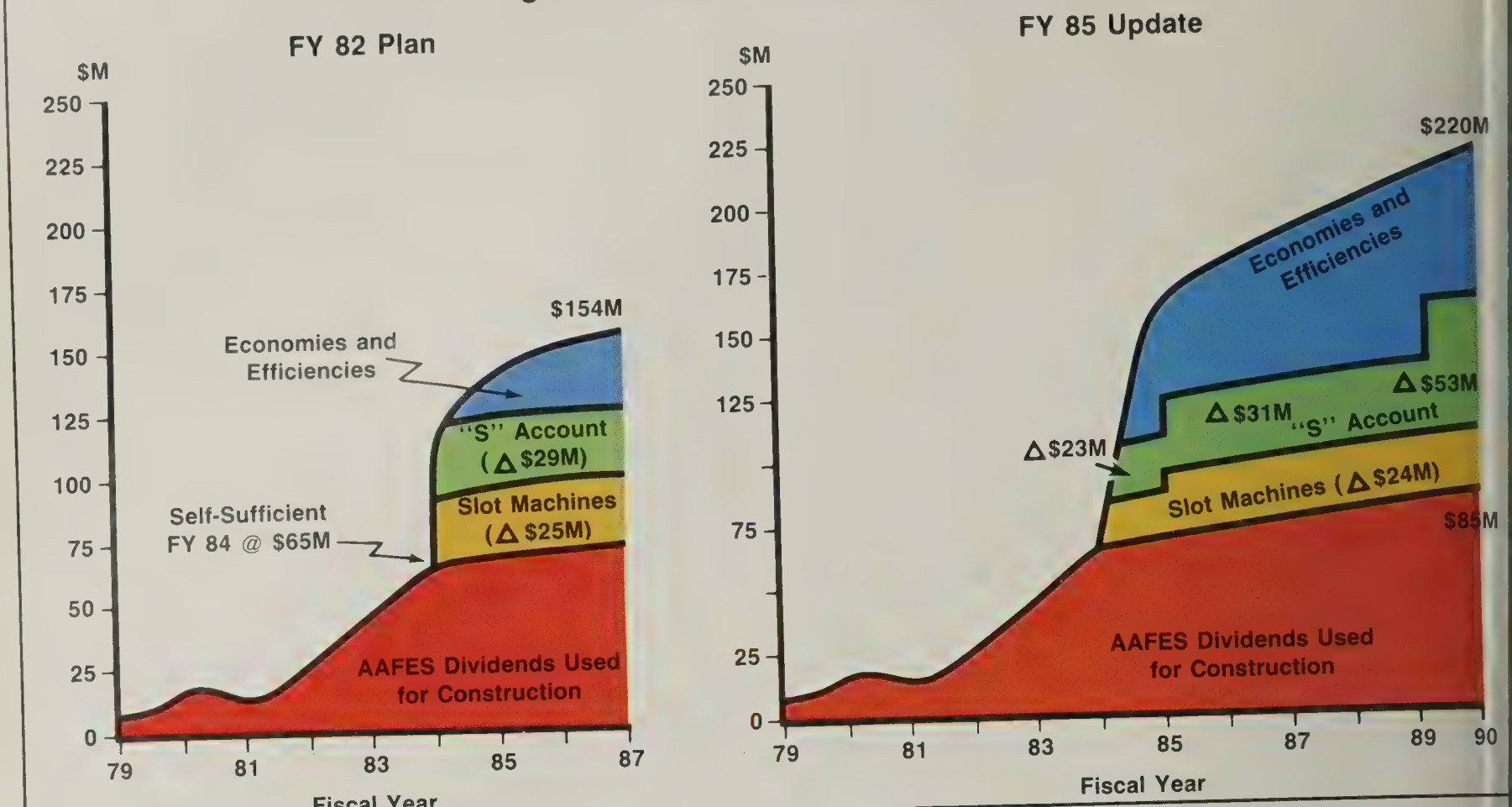
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Figure 2. Revenue Source Forecasts



ment than we had ever been given to expect.

As we looked downrange in 1982, we began to see the potential for even greater advances in the generation of capital, in addition to the "S" account increments, which were yet to come on line. We saw coming enhancements to the overseas commands with the reinstatement of club slot machines and the Army's commitment to Congress that we would use the revenues generated from slot machines for the improvement or replacement of facilities.

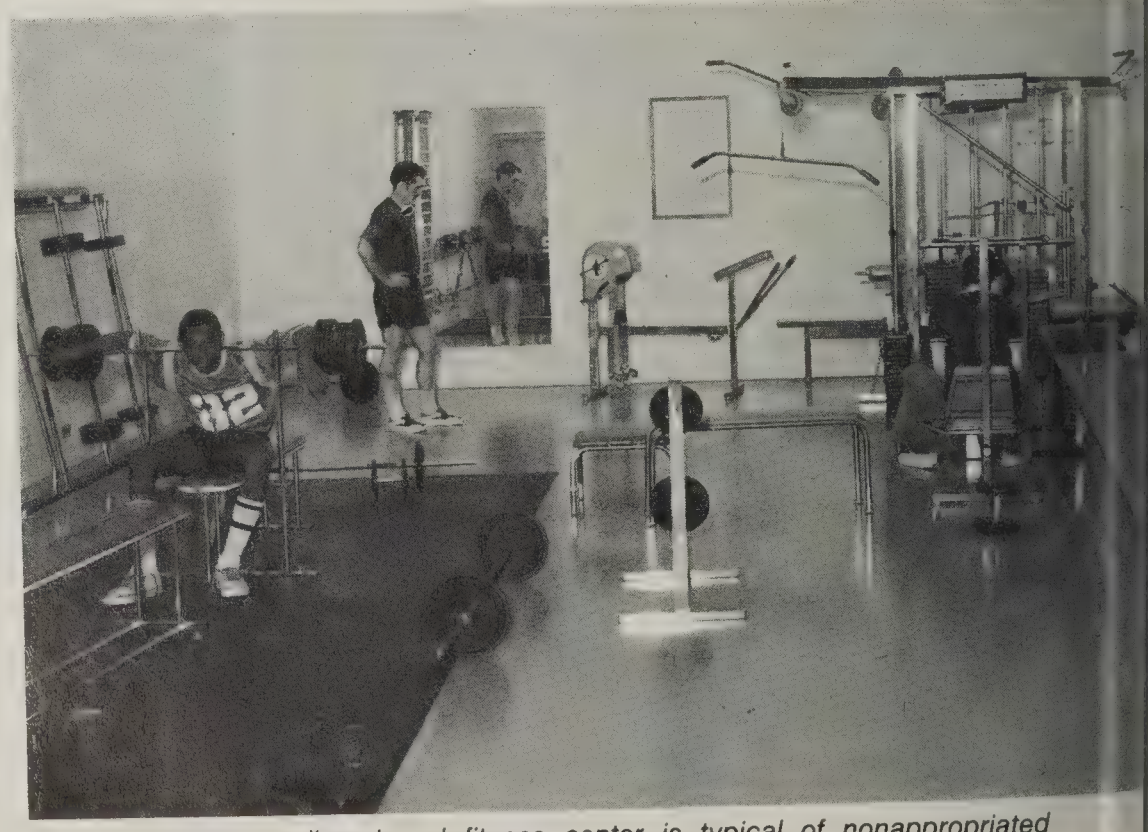
Further, we began to probe the possibilities of a variety of management improvements and innovations which could have an effect at installation level—more modern accounting systems, more business management training, new types of enterprises and the like—and we began to see the potential as much greater than we had previously believed.

As chairman of the MWRRC, in 1982 I took to the Army Policy Council a plan described generally on the left-hand side of Figure 2. What this said was that the Army was on a curve circumscribing the red area of the chart, which showed that, effective in fiscal 1983 and from then on, we would use the entire AAFES dividend for capital needs (except for essential support to isolated sites and certain "must-fund" programs which had no means to become self-sufficient) and that, from this time forward, we could expect to climb toward funding of $65 million worth of NAF major construction per year by the end of the 1980s.

Added to that, above the red area, we would begin to accumulate the benefits of our "S" account increments, the slot machine proceeds, and the various economies and efficiencies planned, which would raise our collective capital funding capability to over $150 million a year by fiscal 1988.

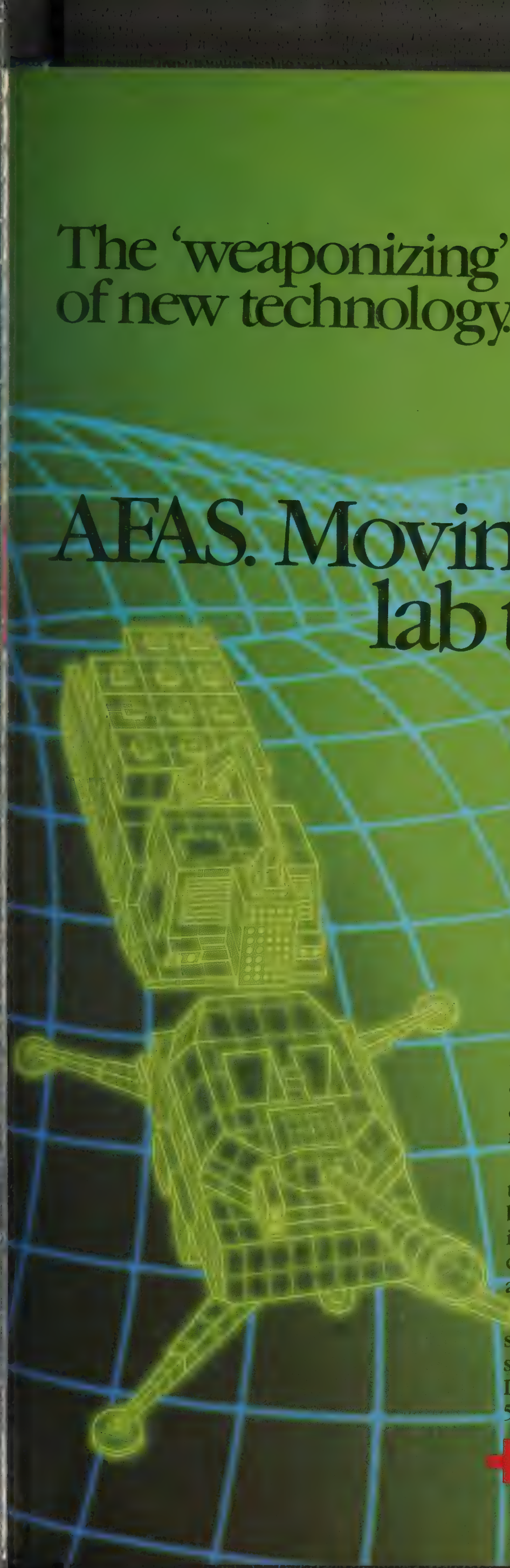
Based on the somewhat unexpected, albeit very rewarding, capability of the MWR work force to adapt to new w of doing business, we felt we needed foster a climate which would contin and reinforce incentives on the part that work force to excel, for the ben of their respective installations.

As a consequence of the Army I icy Committee briefings on subject and subsequent briefi of the Army's four-star commanders, began development of a modern busi system which would permit installat



This well-equipped fitness center is typical of nonappropriated funds activities at Army posts the world over.

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FMC

to aggregate capital locally and, ultimately, to fund their own NAF major construction projects. An idea that began by intending to create "installation sinking funds" developed over time through major commands and installation staffs into a new concept called the installation MWR fund (IMWRF); and IMWRF became the evident platform of choice, on which all our future plans for development and fruition of the NAF and MWR program should be based.

IMWRF upgraded the rather non-business-oriented system by which NAF at local installations was required to be managed—that is, in many separate and discrete pockets within an eight-category classification system. This system satisfied a need—again largely an outgrowth of the club scandals of the 1960s—for a standard way of representing NAF and MWR activities within the DoD.

Secondarily, it provided a degree of financial disclosure acceptable to the Office of the Secretary of Defense (OSD) and congressional oversight. Although the eight categories of NAF certainly serve that oversight purpose admirably, they do not serve installation commanders all that well; rather, they inhibit them from taking full advantage of the financial potential of their installation enterprises, for the overall benefit of their communities.

On a typical installation there exist maybe 10 to 20 separate NAFIs (nonappropriated fund instrumentalities), of various categories, each with its own governing body and its own bank account, operating under rules that say (for example) that revenues from clubs (category V) cannot be used to fund the needs of morale support activities (category III), or vice versa.

Many installation commanders, nominally in charge of upwards of $4 to $5 million, had no idea of the existence of this aggregate amount. As a matter of fact, even had they known, the rules of engagement would have severely inhibited their capability to tap into these resources for the ultimate betterment of their communities. The IMWRF concept separates APF and NAF support by category, while increasing the commander's flexibility to support programs based on greatest need.

The IMWRF, which was field tested at every TRADOC (Training and Doctrine Command) installation during 1984, really raised the consciousness of installation commanders about the tremendous potential to enhance the lives of the Army family that existed on their own installations in the Army NAF accounts.

After thorough evaluation by a general officer steering committee, chaired by the comptroller of the Army, and including representation by the Army Audit Agency, the oversight requirements of OSD and Congress were built into the accounting structure, and the IMWRF test was declared a success, ultimately endorsed by OSD, and is currently awaiting House Armed Services Committee approval to be implemented Army-wide.

The IMWRF confirms the clear intent of the MWRRC that both the burdens ar the benefits of all future NAF and MW program improvements are intended have an effect directly at installation le el. The sum total thrust of the progra is clearly focused on enhancing the cap bility of installation commanders to fu their own community needs for faciliti as well as operations.

This is American free enterprise at best. Although our commanders ha never been consciously or intentiona schooled in conducting business ope tions, they have shown a marked inter and ability to master the rules and app the benefits toward local community needs.

The world did not stand still while were testing IMWRF. As the NAF p gram shifted gears and set its sights hig er, some new talent joined the MWR in an advisory capacity—the assist chief of engineers, the director of the my's operations and maintenance bud and senior Army representatives of AAFES and commissary activities. In fiscal 1984–86 budget, the MWRRC proved funding for nearly 200 NAF m jor construction projects costing m than $300 million, and the fiscal 1 curve was updated to show our prog and expectations two years later (see rig hand side of Figure 2).

Along with development of IMW the fiscal 1985 update reflects a busi now grown in five years to $1.4 billion contemplates further innovations gea to enhance the commander's financial pability; for example, the "Burger Ki



The dining room of the recently remodeled noncommissioned officers' club at Ft. Hood, Tex.

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The ballroom of the recently renovated noncommissioned officers' club at Ft. Hood, Tex.

initiative. The idea of brand-name fast-food enterprises began as a simple intent to afford the Army family a morale factor, a slice of American life, particularly in overseas and remote U.S. locations.

The idea of what it could do financially for commanders locally came only later, when we began to hear presentations from the national chains and to ponder how to bring them aboard our installations.

The arrangement chosen, in which AAFES acts as a franchisee, takes advantage of AAFES's considerable merchandising and contracting experience; provides employment priority for family members; and absolves the commander from the need to hire, fire, train or administer employees, fund construction of the facility or operate it. The commander gets the best of all possible worlds—an "American mainstream" brand-name operation for his community and a 50 percent share in the profits, without any of the operating headaches.

Is the Army installation going to replicate "the strip" now normally found *outside* the gates? That is not likely at all; in fact, the Army DCSPER has enjoined all installation commanders to hold back on any further Burger King-type initiatives until we get this one completely implemented and review where we want to go next. Clearly, the Army is not going to radically alter the institutions and structures that are uniquely military and that we want to remain so; the Army leadership intends to see to that.

We are, however, reviewing a variety of ventures of other types that could ultimately alter and enhance Army community life. One that has attracted a certain amount of press attention is the introduction of nationally known hotel/motel chains onto Army installations.

As our potential to fund NAF construction has grown, we have attempted to satisfy the demands of many of our installation commanders for guest house-type accommodations for the Army family; at the same time, we have sought a means to accommodate the demand for community- and fitness-oriented facilities of the type we see burgeoning in the private sector. The MACOMs all furnished us candidate installations for these facilities.

We in turn engaged a hotel planning consultant who conducted intensive marketing surveys both on and off post at all the installations nominated and recommended a pilot program at six stateside installations. We plan to pioneer this program using a mixture of requirements—some providing lodging only; some including physical fitness facilities; and some with other enhancements, depending on the sites ultimately selected by the installation commanders and whatever existing adjacent facilities complement the activity.

Like Burger King, what we contempl is a franchise operation, with the CF as a franchisee and the installation cc mander sharing in the profits.

The challenge is to provide first-cl nationally known hotel/motel accomm dations for the Army family, on post affordable prices, and in the process br on board some modern, community- ented facilities that are geared to the v best available in the larger American ciety. The day is not yet here when Army family on the move can dial toll-free number that will give them assured standard of what to expec their new installation.

There is no doubt, however, that e tual reality would certainly strike a b against one of the greatest detractor military life, the uncertainty and finar burden of arriving and beginning lif a new installation.

Although this article has talked a about APF and NAF, programming, fit-sharing and the like, the true bot line of the Army's conglomerate busi enterprise is how it ultimately pays of the military family.

If we can provide them with first- facilities, improve the professionalis management and generate funds manders can use to take care of local programs and needs, all the l powered charts, graphs and scheme be paying off handsomely for our s holders—the Army family.

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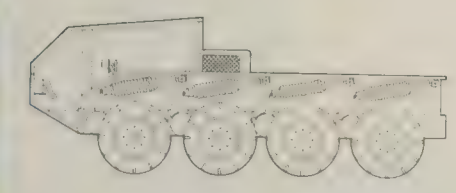
e Standard Tactical Vehicle (STV) represents a family of versatile lti-role tactical vehicles built around our revolutionary 8W12 Trailing n Drive (TAD) Undercarriage concept. The STV is now performing a e range of combat missions in an almost endless number of vehicle figurations: from the U.S. Army's Vulcan Wheeled Carrier (VWC), ransport vehicles, to radar systems, to mobile rocket and missile ems, and more.

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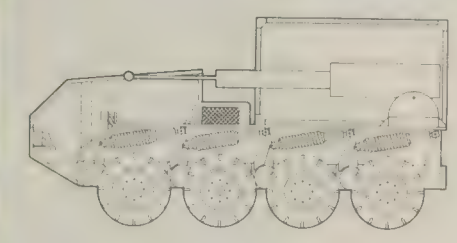
Our TAD design puts hydraulic cylinders and a trailing arm at each el's spring shock mechanism. A single, direct cylinder control allows operator to raise or lower any wheel, or any combination of side or wheels independently from others. The overall vehicle profile can aised or lowered by 12", allowing for ease of air transportability and uch reduced silhouette when emplaced.

The trailing arms to each wheel are jointly driven from a gearbox mon to each side which provides optimum torque to each wheel at perating speeds. This *all wheel drive* means continuous *all wheel er.* While conventional vehicles are shifting gears, or locking out the rential, or switching to 4-wheel drive, the STV with Standard's TAD gear and on the run.

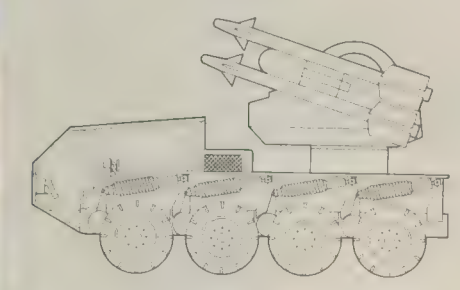
Existing applications of the Standard Tactical Vehicle currently under development or in production.



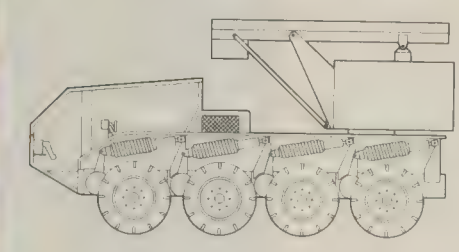
8W12 Standard Tactical Vehicle (STV)



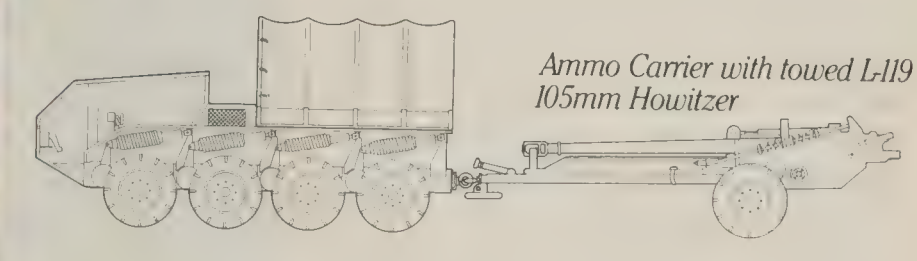
C³I Vehicle



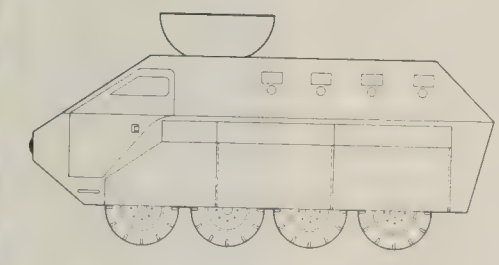
Rocket/Missile Carrier



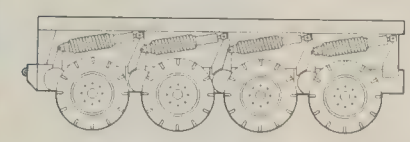
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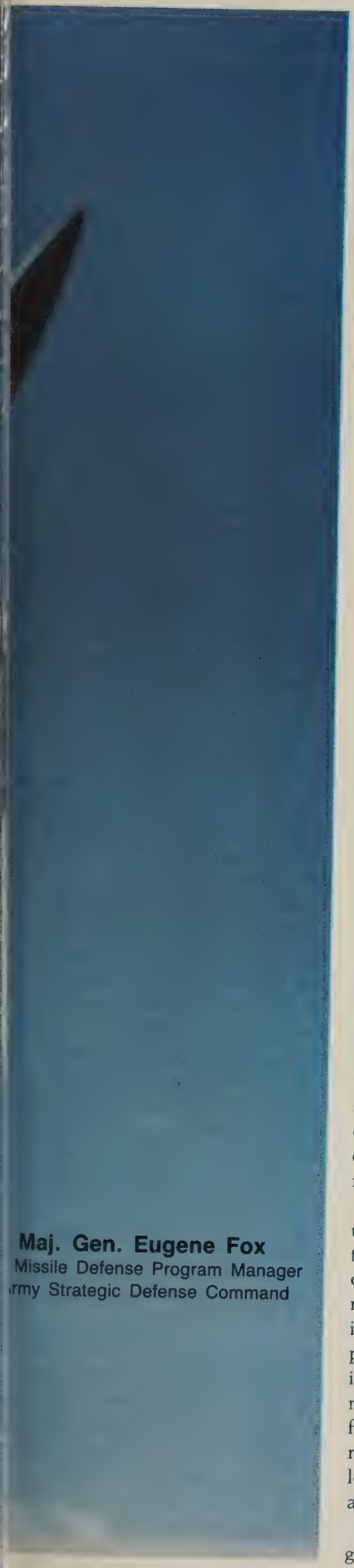
The Army Leads Way In Ballistic Missile Defense

As the Army's technology led the nation into space with the Explorer I satellite launch in 1958, Army technology today is leading the way toward a potential defense against nuclear-armed ballistic missiles. The U.S. Army Strategic Defense Command (USASDC), formerly the Ballistic Missile Defense Organization, and its antecedents have been toiling quietly since 1955 to provide the necessary capabilities. In the process, the USASDC has created a center of excellence and dedication that has kept the United States ahead of or equal to the Soviet Union in the technologies for strategic defense.

From the initiation of the Nike II air defense study in 1955 to President Reagan's establishment of the multiagency "strategic defense initiative" (SDI) program, work by the Army has led the way. In 1962, the Army's prototype Nike-Zeus system accomplished probably the world's first "intercept" of an intercontinental ballistic missile (ICBM), coming close enough to have destroyed it with the nuclear warhead Zeus was designed to carry. From 1963 to 1967, the Nike-X Project developed electronically steered multiple-function radars, high-speed data processing and high-acceleration interceptor missiles needed to cope with the increasing Soviet threat.

These accomplishments formed the basis for the free world's first and only operational ballistic missile defense, "Safeguard." The system, with the mission of defending Minuteman ICBMs, became fully operational in 1975 in northeastern North Dakota, but was inactivated in 1976 at the direction of Congress. Limits imposed by the 1972 ABM (antiballistic





Maj. Gen. Eugene Fox
Missile Defense Program Manager
Army Strategic Defense Command

Thirty years of experience, a sound technological base and key development programs have contributed to creation of a center of excellence and dedication that has kept the United States ahead of or equal to the Soviet Union in this vital area.

missile) Treaty with the Soviet Union reduced its effectiveness and made it too costly to operate.

Newer, more capable technologies for defending hardened targets were considered first by the Carter (the low-altitude defense system) and then the Reagan Administrations (the "Sentry" system) as options for defending the MX "Peacekeeper" missiles. Meanwhile, the USASDC was already investigating the technologies for particle beam and laser devices and was validating optical sensor, missile-borne data processing and missile guidance technologies for a nonnuclear interceptor.

Like the Army's plans for a mission to the moon, which were already on the shelf when the National Aeronautics and Space Administration was created in 1960, the USASDC's knowledge and experience in strategic defense were national assets when two presidential teams began their studies in response to President Reagan's call for a national program of research to eliminate the threat from nuclear ballistic missiles.

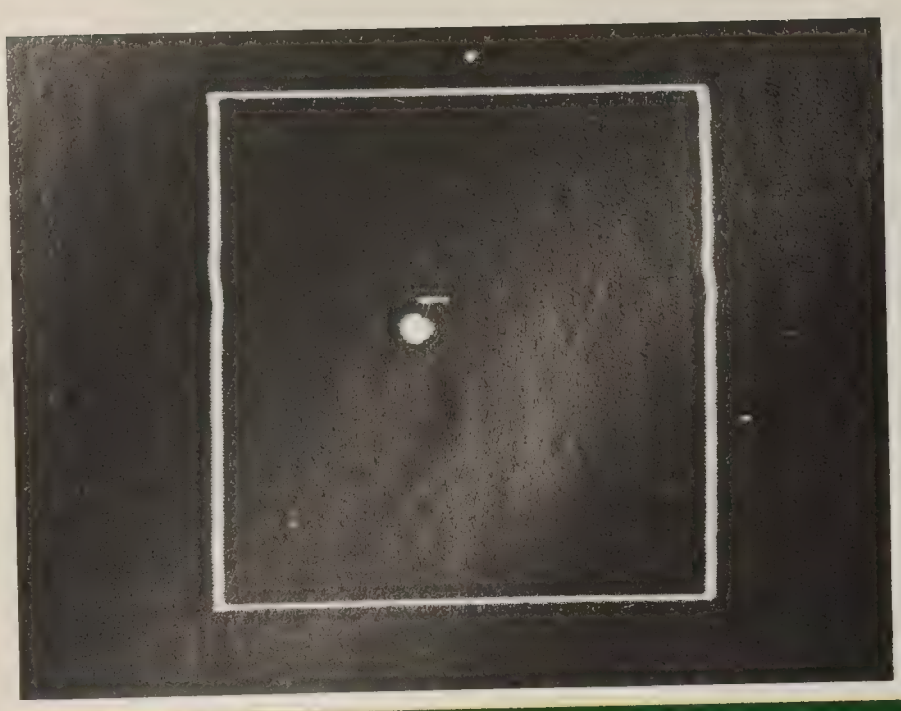
An historic event on 10 June, 1984, underscored the importance of Army contributions to the SDI: in the fourth flight of the USASDC's homing overlay experiment (HOE), a HOE flight vehicle used its own optical sensor and on-board computer to perform the world's first direct-impact intercept and destruction of a mock ICBM warhead. The SDI had its first major success, and the Army had real-world confirmation of a U.S. technological capability for *nonnuclear* defense against strategic nuclear missiles.

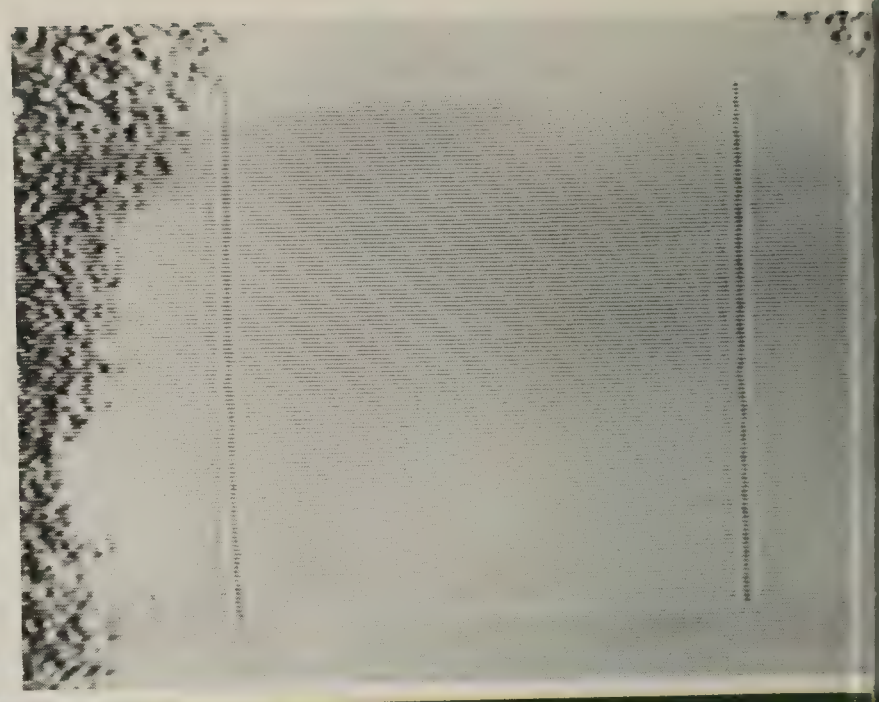
The significant portion of the SDI Organization's (SDIO's) fiscal 1985 budget devoted to USASDC efforts is further recognition of the potential of the Army's programs for the SDI. Of the estimated $26 billion required for the SDIO through fiscal 1989, a major portion will go to Army programs because the preliminary work was already done and a focused organization was in place and ready to execute programs.

What underlies this record of leadership by accomplishment, of course, is people. The men and women of the USASDC represent nearly three decades' experience in studying, researching, designing and testing technologies and concepts for destroying attacking ballistic missiles during all phases of their flight. They constitute a center of excellence for the free world in strategic defense.

A few statistics provide clues to some of the reasons for the USASDC's leadership through excellence. Ninety-nine percent of the organization's nearly 300 civilian professionals have college degrees. Thirty-eight percent have advanced degrees, including ten percent with doctorates. They also include five recent recipients of the prestigious Sloan fellowship in management, a recipient of a congressional fellowship and one person selected for a developmental assignment within the Office of the Secretary of Defense. The command's civilians are experienced and dedicated, as well as educated. They average nearly 20 years in their professional fields, and an average 15 of those years have been concentrated on ballistic missile defense.

Of our 110 military officers, 98 percent have degrees, including 66 percent with master's degrees and 2 percent with doctorates. A total of 26 of the officers have





previous service in a project management assignment, 15 have attended the Defense Systems Management College course in project management at Ft. Belvoir, Va., and 7 have attended the Army's Materiel Acquisition Management course at Ft. Lee, Va.

This record of accomplishment, expertise and dedication has made the Army a key member of the SDI team, with significant responsibilities in all five of the broad research and technology elements of the SDI program.

In each technology area, the effort involves first, developing discrete technologies—the fundamental prerequisites for system components or subsystems—and second, conducting experiments and technology validations. The Army's specific responsibilities in each area are described below. As with all efforts since 1972, the work is being conducted in strict compliance with the ABM Treaty.

Ultimately, the plan is to bring the technologies together for an integrated validation.

The surveillance, acquisition, tracking and kill assessment program element, in addition to the four functions in its title, includes a vital function called discrimination, the capability to separate threatening ICBM reentry vehicles from decoys and debris. In conjunction with the development of hardware for technology validations, a number of technologies may be pursued, such as new radar-imaging techniques, new optical-imaging techniques using lasers and high-data-rate processing. Developing the means for imaging objects in space is particularly important in the effort to advance discrimination capabilities.

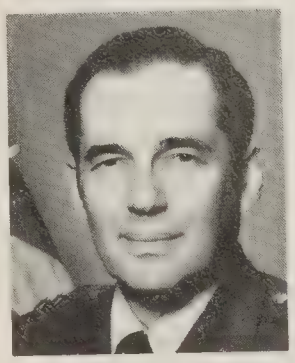
Functional technology validations will include:

■ The airborne optical adjunct (AOA) project. This experimental project will examine the use of airborne infrared sensors and real-time data processors to a ment ground-based radars for the de tion and tracking of ICBMs, discrimi tion between warheads and decoys, for the handover of targets to the rad The $289.4 million prime contract fo five-year AOA technology validation p gram was awarded to the Boeing A space Company in July 1984. The ef is currently in the design phase.

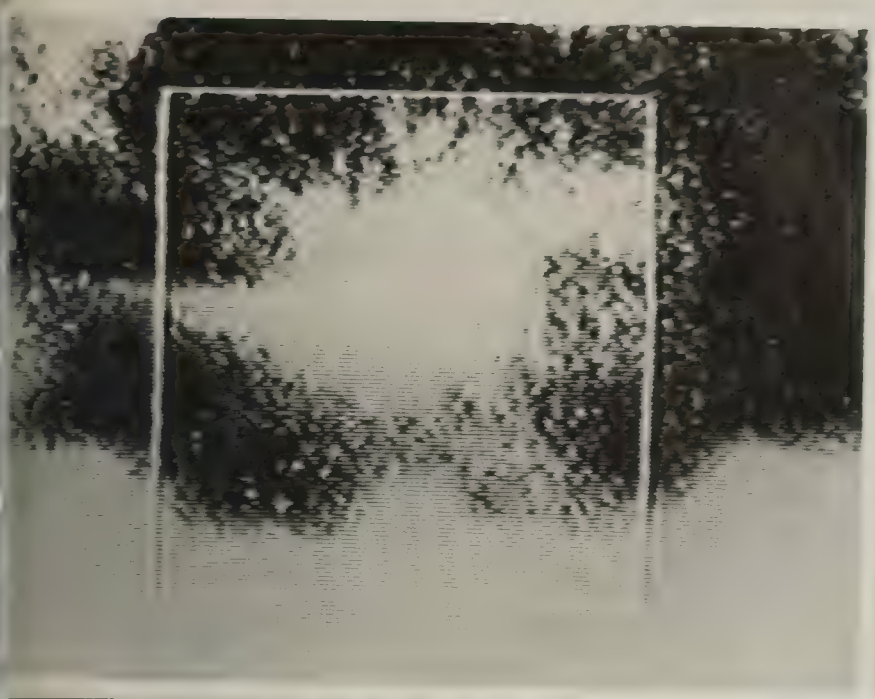
■ Terminal-imaging radar (TIR) p ect. The primary objective is to dev and validate capabilities for high-altit tracking and discrimination using a gro based, X-band, phased-array radar June, six-month contracts for appr mately $5 million each were awarde Raytheon Company and Westingh Electric Corporation for developmer preliminary TIR specifications and de The contracts include an option f 12-month second-phase effort to dev both a sufficiently detailed design t sure that the contractors' proposed r can meet the TIR requirements and posals for the fabrication and funct technology validation of the TIR. I the radar would be augmented by th borne optical adjunct in both the tional and integrated technology va tions.

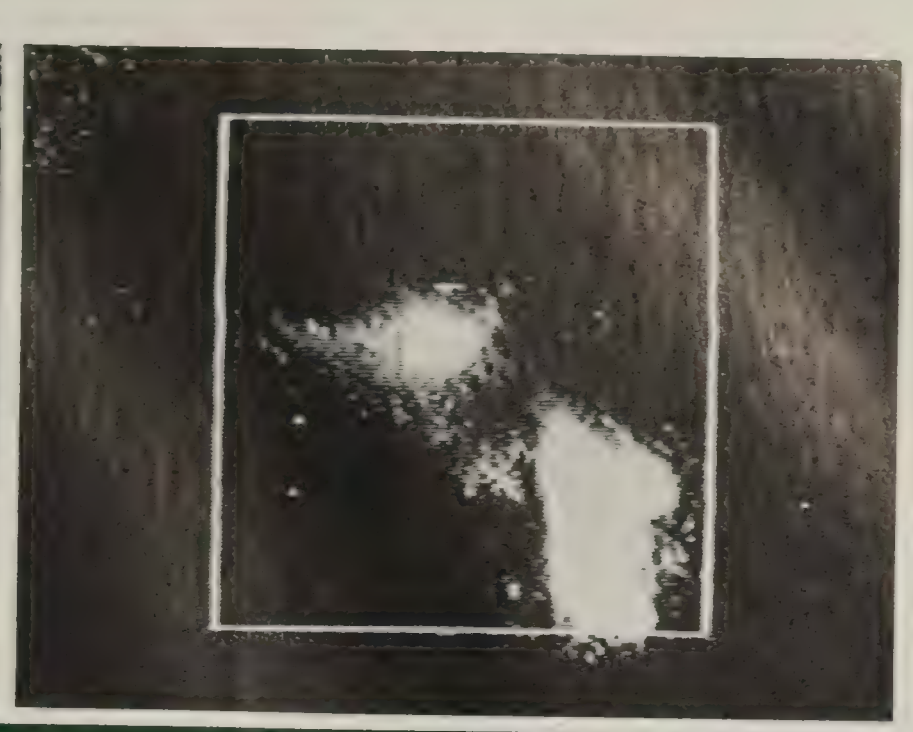
Another concept being pursued long-wave infrared (LWIR) space p The concept calls for launching o more rockets carrying LWIR sensors the ground. Once above the atmosp the sensors would provide data o approaching attack. Data from the would be correlated to provide hig curacy pointing information for th fense and to predict which groun gets are under attack.

The directed energy weapons (I



MAJ. GEN. EUGENE FOX was named Ballistic Missile Defense Program Manager in September 1984, following a year as commanding general of the Ballistic Missile Defense Systems Command at Huntsville, Ala. A 1956 graduate of the U.S. Military Academy, Gen. Fox holds a master's degree in aerospace engineering from the University of Arizona and graduated from the National War College. A career air defense artillery officer, he has held many weapons development and acquisition posts, including two tours on the Department of the Army staff during which he helped plan Army air defense systems. During 1978–79, he was project manager for the "Missile Minder" and other air defense tactical data systems. After a tour as executive officer in the Office of the Assistant Secretary of the Army for Research and Development (1979–80), Gen. Fox served as deputy director for test and evaluation in the Office of the Under Secretary of Defense for Research and Engineering until 1983. He served in Vietnam during 1966–67, twice held senior instructor positions at the Army Air Defense School and commanded the 5th Battalion, 59th Artillery, Ft. Bliss, Tex. (1970–72) and the 10th Air Defense Artillery Group in West Germany (1976–78).





nology area includes some of the t potentially revolutionary approaches lefense against ballistic missiles. Four c concepts are being pursued: space- d lasers, ground-based lasers, space- d particle beam devices and nuclear- en directed energy weapons. This area esearch appears to hold great oppor- ties for breakthroughs in terms of ile boost-phase (launch) and post- st-phase (warhead deployment) inter- .

he USASDC program has, since the 1970s, included participation in man- g work at Department of Energy la- atories on a short-wavelength, free- ron laser and a neutral particle beam ce.

ground-based, free-electron laser may candidate for a boost-phase kill sys- whose beam would be directed against ts by bouncing it off large relay mir- based in space. By contrast, the neu- particle beam device for boost-phase would be based entirely in space.

th of these concepts also have poten- for assisting in the midcourse phase e) discrimination process. For this the neutral particle beam device potentially be ground based on a et and launched into space as needed. th these intriguing devices are still e laboratory, but the goal is to bring e beam device concepts to an equiv- level of maturity in time for deci- regarding strategic defense which DI is designed to support.

the area of kinetic-energy weapons, Army's homing overlay experiment ly reflected the potential of employ- "hit-to-kill" approach to destroying tic missiles above the atmosphere. is the principle of kinetic-energy weapons, which are at the heart of the Army's responsibilities in the SDI. Areas being explored include nonnuclear interceptor missiles and projectiles that would be fired by hypervelocity gun systems.

Major programs for development and validation of technology for both endoatmospheric and exoatmospheric interceptors are under way or planned:

■ The small radar-homing intercept technology (SRHIT) program is investigating new missile control techniques, using a highly maneuverable, homing flight vehicle. A series of flight experiments is yielding data on the accuracy achievable within the atmosphere with such a vehicle. Sufficient accuracy is a key to techniques that would permit nonnuclear "kill" of strategic nuclear missiles that have reentered the atmosphere. LTV Aerospace and Defense Company is the SRHIT prime contractor.

■ The high-endoatmospheric defense interceptor (HEDI) project has conducted a competitive concept definition for a nonnuclear interceptor which would operate in the upper reaches of the atmosphere in conjunction with the ground-based terminal-imaging radar. Such a system would be capable of defending unprotected targets as well as hardened military ones.

Concept definition studies were performed in 1984 by four major aerospace firms. After the results were evaluated, the HEDI Project Office combined the best ideas from those concepts with the results from its own analyses to develop a range of performance requirements for a HEDI functional technology validation. In April, those requirements were the basis for a request for proposals for a competition, open to all comers, to select

This series of photos made from the video recorder of a tracking telescope documents the success of the June 1984 tests, in which the Army's HOE (homing overlay experiment) interceptor hit a dummy ICBM reentry vehicle carried into space by a missile fired from Vandenberg Air Force Base, Calif.; the interception took place at the edge of the atmosphere, 100 miles above the Kwajalein Missile Test Range in the Pacific.

At far left, the exhaust plume of the nonnuclear HOE interceptor is seen in the center of the tracking envelope frame, seconds before impact (the short bar above the plume is a tracking marker).

A vast cloud of debris is all that is visible in the second photo from left, taken a tenth of a second after impact.

In the third photo, the cloud of particles at the extreme left is all that remains of the dummy ICBM warhead (which was flying from right to left), and the cloud in the center is debris from the interceptor, after a body-to-body collision at an impact speed of about 20,000 feet per second.

In the last frame, two chunks of the interceptor are still visible—the dummy warhead was smashed into an estimated one million pieces and debris from both vehicles spread over an area of 40 kilometers within a few seconds of impact.

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The Army's June 1984, 'homing overlay experiment' (HOE) flight conclusively proved predictions that an infrared optical sensor can guide a nonnuclear interceptor to direct impact with an ICBM reentry vehicle traveling thousands of feet per second, above the atmosphere: here, the HOE interceptor, powered by the first two stages of a Minuteman strategic missile, rises from the launch pad at the Kwajalein Missile Range in the Pacific.

the contractor to conduct the validation. A selection was planned at the end of fiscal 1985.

■ The exoatmospheric reentry-vehicle interceptor subsystem (ERIS) project will develop the technology for a low-cost, ground-launched, nonnuclear interceptor that would intercept ballistic missile reentry vehicles above the atmosphere, during the midcourse portion of their flight.

It is expected that knowledge gained in the homing overlay experiment will be directly beneficial to the ERIS effort. So the ERIS subsystem will probably be a multistage, lightweight interceptor and employ an optical sensor for homing on its target. As with the HEDI, four concept definition studies were conducted by major aerospace companies. The ERIS project office analyzed updated requirements from the four concepts. The requirements were issued in May in a request for proposals for another entirely unrestricted competition to determine the contractor for the ERIS functional technology validation. Award of the contract was planned for late fiscal 1985 or early fiscal 1986.

The goal in the systems concepts and battle management area is to provide positive control of the operations of a complex, multilayered defense system—certainty that the system can be employed when it is needed and that it is safe when not needed.

The Army's responsibilities are to:

■ Perform systems analyses to provide overall technology guidance in the areas of weapons, sensors, battle management, command, control and communications (C^3), and supporting technologies required to engage ballistic missiles late in the midcourse (exoatmospheric) and during the terminal (endoatmospheric) phases of their flights.

■ Develop high-performance processors and software and responsive, highly reliable communications networks. Th are essential to achieving a highly resp sive, ultrareliable, survivable, endur and cost-effective battle management system.

Technology evaluation and validat in this area will depend largely upon s ulation. Therefore, development of ef tive modeling and simulation tools i high priority. Impressive advances in c processing capability will be required realize the goal stated above.

The Air Force bears similar respo bilities for the boost and early midco defense phases. The SDI Organizat under Lt. Gen. James A. Abraham U.S. Air Force, will coordinate the forts to ensure that the systems me

Providing the necessary supporting tems and technologies for strategic fense comes under the rubric, "surv bility, lethality and key technologi There are four primary projects.

■ Predicting the minimum energy quired to kill an opponent's system

■ Establishing the ability of a B system to survive attack and continu function effectively.

■ Developing multimegawatt p systems.

■ Improving space logistics capa ties.

It is in the first two, lethality and vivability, that the Army's responsibi are concentrated.

The SDI's emphasis on nonnuclea fense capitalizes on work that was alr under way in the Army's programs a result, a prime focus for Army res sibilities in this area is expanding data base on the lethality of nonnu defensive weapons against nuclear o sive weapons.

Survivability in all its endless as is obviously a constant concern any military technologies are being in gated. What effects can the threat en against this sensor, that interceptor,

Effective Command and Control–Force Multiplier.



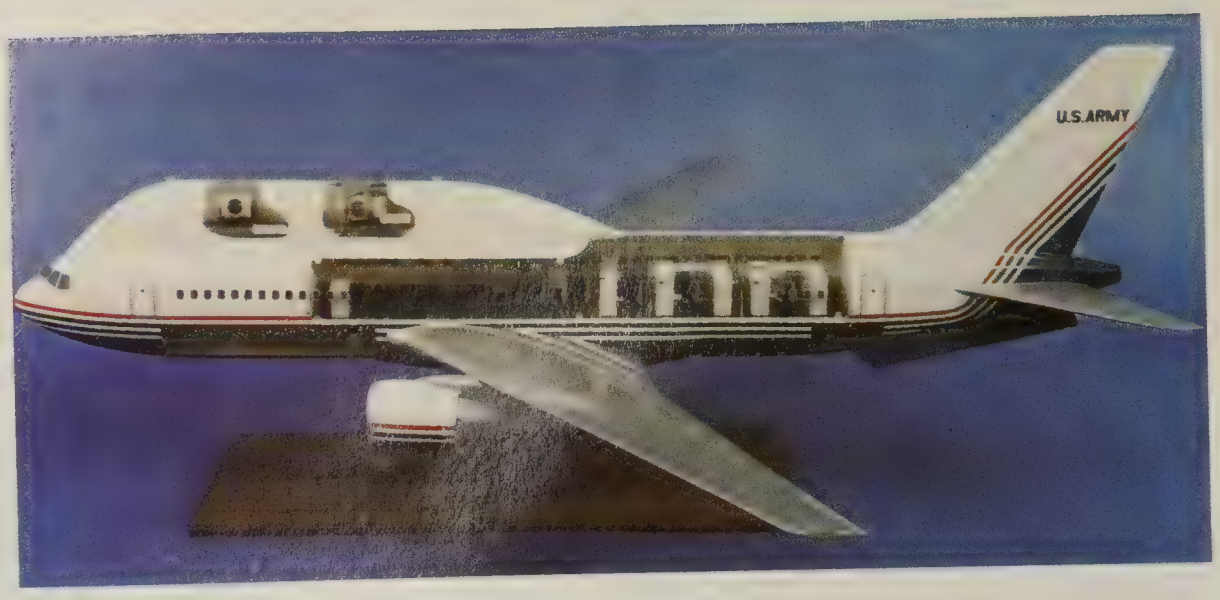
October 1, 331 BC, on the Plain of Gaugamela in what is now northern Iraq: Alexander, King of Macedon, leads a well-trained force of some 7000 cavalry and 40,000 infantry against the Persian Emperor, Darius, with an army five times larger but comprising mainly ill-disciplined tribesmen. The Persians opened the battle with a powerful cavalry charge, but this left a gap in their battle-line which Alexander immediately exploited. Riding at the head of his cavalry and supported by a phalanx of heavy infantry, Alexander charged straight toward the Persian emperor and his entourage. The Macedonians cut through the enemy Royal Guard and Darius fled in terror. The huge Persian army was now leaderless and Alexander was able to defeat it. Gaugamela was one of several victories by Alexander which brilliantly demonstrated the validity of the fundamentals of command and control which he established more than 2300 years ago.

Sanders Associates, Inc., of Nashua, New Hampshire, is a leader in the field of command and control systems in the twentieth century.

SANDERS

Research and text by Alfred Price, author of 'Instruments of Darkness' published by Charles Scribner's Sons, New York. Illustration by Alfred "Chief" Johnson, Sanders Associates, Inc., Nashua, New Hampshire.

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This cutaway model shows how a Boeing 767 jet transport aircraft will be modified to flight-test two competing versions of optical sensor and data processing suites for the Army's airborne optical adjunct (AOA) project. The tests will determine the technical ability of airborne sensors to detect, track and discriminate among ballistic missile reentry vehicles and pass target data to ground-based radars.

their associated data processing, battle management and C^3 systems? What active or passive countermeasures are possible? Even if each of the elements is survivable, can the system as a whole survive?

The Army is also interested in investigating unusual forms of power generation because of the requirements for both continuous maintenance power and high peak power in most systems.

Following the functional technology validations of the individual projects, the Army plans an integrated technology validation (ITV), at Kwajalein Missile Range in the Marshall Islands, in the early 1990s. Presently, plans include the AOA, the TIR and HEDI. Through flight experiments, the ITV will quantify the performance attainable when these technol elements are operated interactively.

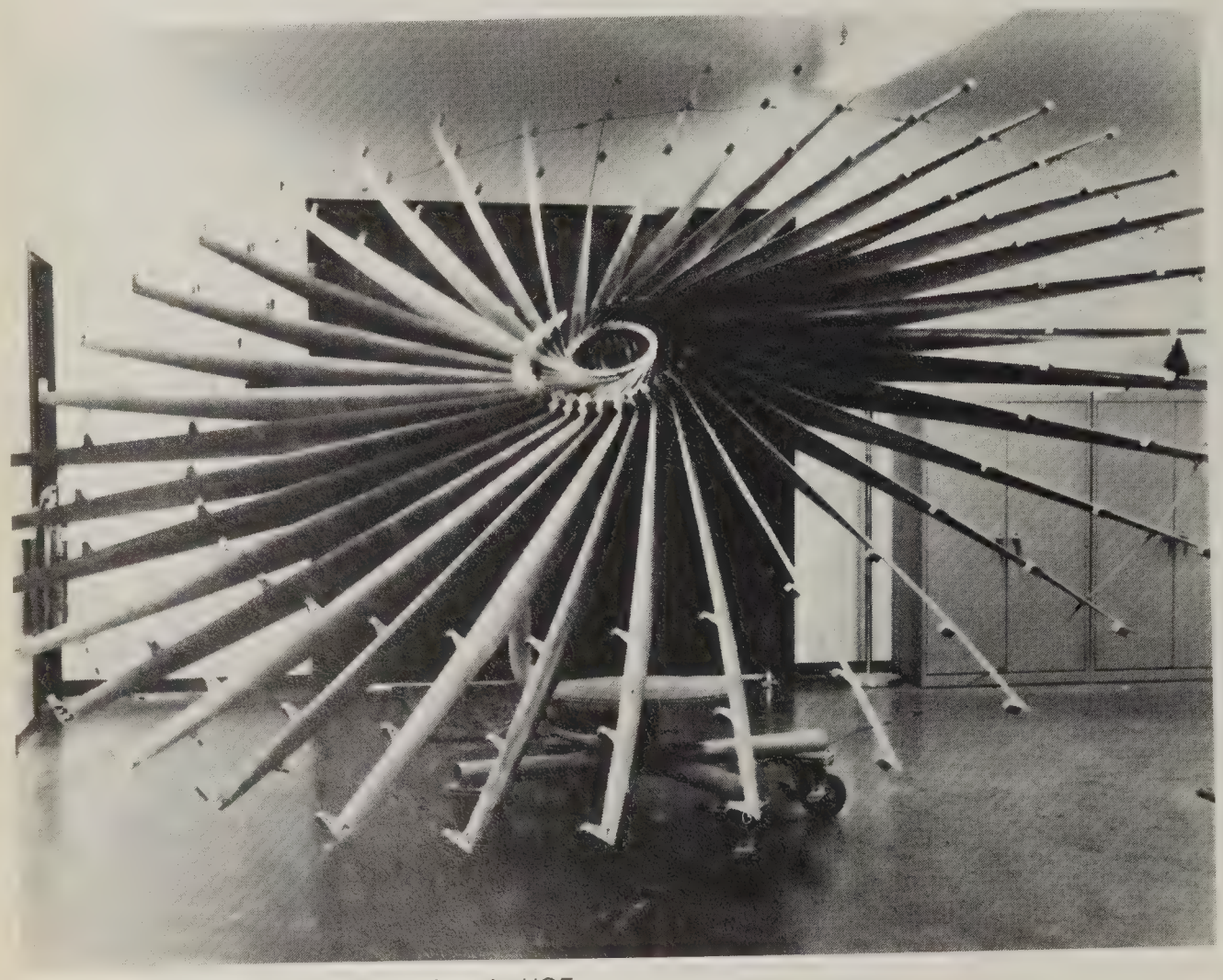
Significant improvements are expe to be validated in such functions as ta tracking and handover, joint optics-ra discrimination, engagement time-line n agement and nonnuclear kill. Signifi integration issues and unknowns wil identified.

The data collected will be used to date simulations that can be used to dress those issues and optimize the b fits of the interactions. Conceivably, ITV will provide decision makers options for evolutionary defensive de opments and deployments if they ch to follow that route.

As Secretary of Defense Caspar Weinberger has observed, "Our stra defensive initiative truly is a bold gram to examine a broad range of vanced technologies to see if they provide the United States and its with greater security and stability i years ahead by rendering ballistic siles obsolete."

The products of nearly three de of Army leadership in strategic de technology provide much of the fou tion for this undertaking. Now, j with the other services and other go ment agencies in a truly national pro the Army's Strategic Defense Com continues to provide leadership as a cipal contributor to the strategic de initiative.

The goals are the development o technologies and determination of potential to provide options for eff defense against strategic ballistic mi Ultimately, the result may be a new for deterrence and greater stabilit then-Under Secretary of the Army man R. Augustine remarked in ce nies marking the equipment rea date of the Safeguard system in "The payoff is in terms of peace fo ple throughout the world."



The business end of the Army's HOE (homing overlay experiment) interceptor, which was guided to a direct impact with a dummy ICBM warhead in Pacific tests last year: the articulated arms of the warhead, seeded with steel weights, were wrapped closely behind the infrared optical sensor in the nose, opening to form the 15-foot-diameter 'net' configuration shown, a few seconds before impact; telemetry data, however, showed that impact was in the center of the interceptor body.

Who Delivered JTIDS in Real Time? The Singer-Rockwell Team…naturally.

Singer's Kearfott Division is the prime contractor, system integrator, software/hardware developer and production "Leader." Rockwell Collins Government Avionics Division is the Receiver/Transmitter developer and production "Follower."

Delivery of the 68 Class 2 Full Scale Development (FSD) models under contract has now begun. The first has been shipped to the U.S. Army. Of the total, 27 terminals will be shipped to the Army, 19 to the U.S. Air Force and 22 to the U.K. Ministry of Defense (MOD).

The USAF will use JTIDS in the E-3A (AWACS) aircraft to enhance Airborne Early Warning and in F-15 fighters for combat air patrol. The Air Force ground based command and control centers will also utilize this protected link.

The U.S. Army will deploy it for command and control of the Short Range Air Defense System (SHORAD) and High to Medium Air Defense System (HIMAD) battlefield Air Defense systems for coordination of Patriot, Hawk and Stinger class weapons. Initially, the tests will involve the integration of the terminals into the PLRS/JTIDS Hybrid system.

Application of the Units for the UK MOD include TORNADO, NIMROD and UKADGE installations. A joint USAF/Army evaluation exercise is also planned.

JTIDS is a secure, high-capacity, jam-resistant information distribution system based on the extensively tested and proven Time Division Multiple Access (TDMA) technology.

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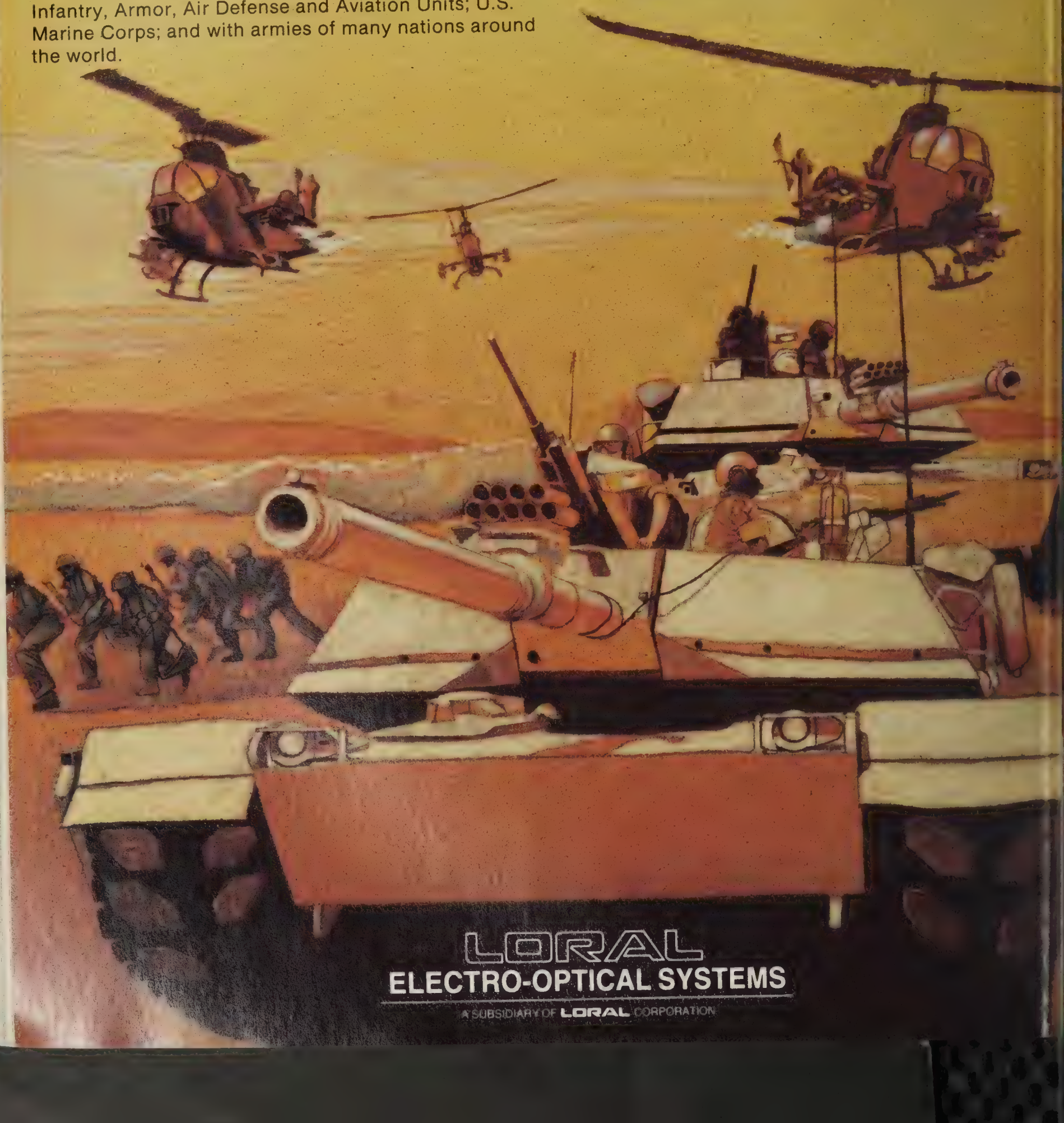
MILES (Multiple Integrated Laser Engagement System) has revolutionized the way in which armies train for combat. Eye-safe laser transmitters simulate live ammunition from direct fire weapons. Detectors on opposing troops and weapon systems signal a hit or near-miss. MILES is highly valued for its ability to accurately assess battle outcomes and to teach soldiers the skills required to survive in combat and win the battle.

Fielded MILES weapons simulators range from M-16 rifles to M-1 tanks to attack helicopters and to air defense weapons. MILES is easily adapted to virtually any direct fire weapon system.

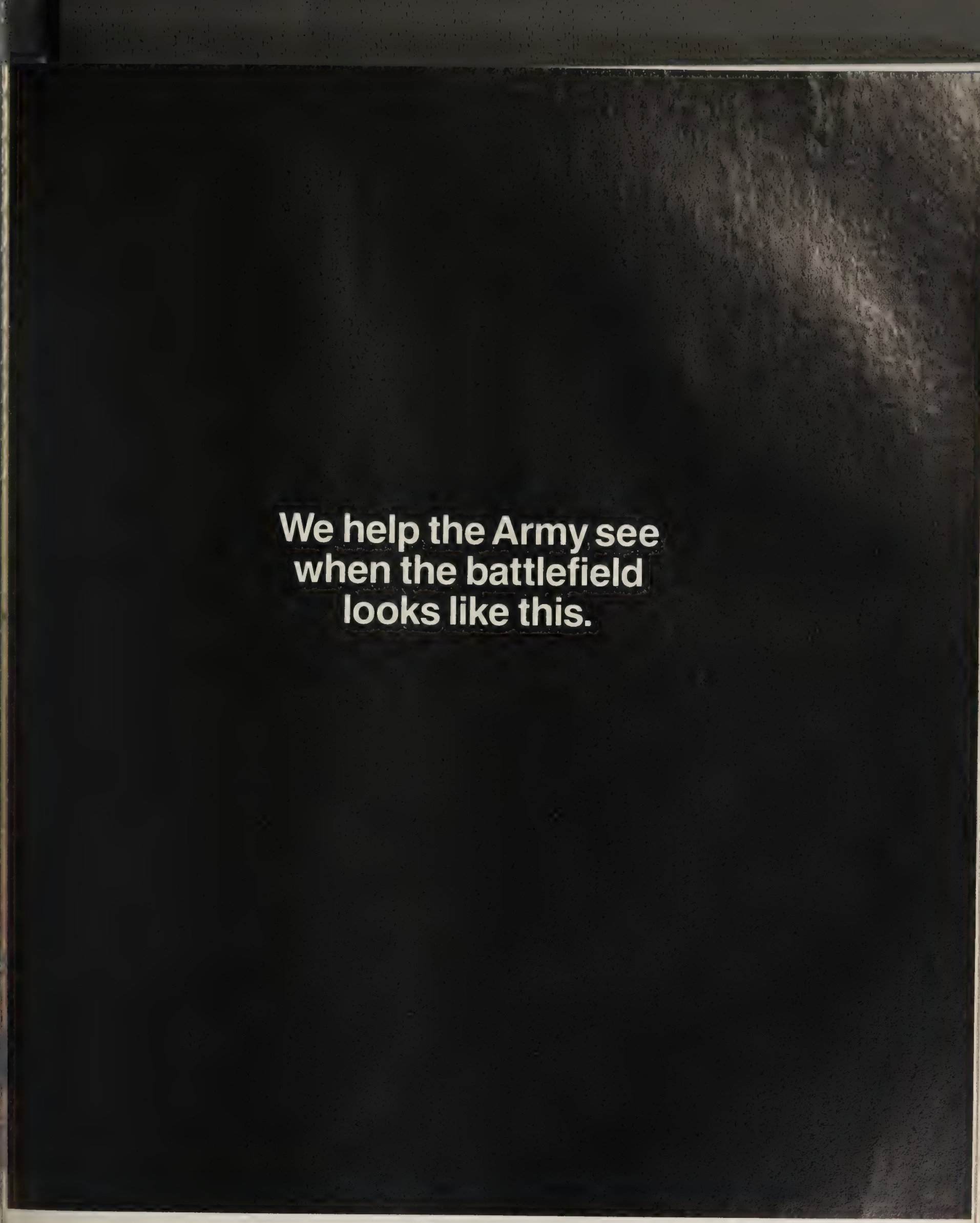
MILES has been fielded with the U.S. Army's Infantry, Armor, Air Defense and Aviation Units; U.S. Marine Corps; and with armies of many nations around the world.

Loral Electro-Optical Systems is an organization with twenty-nine years' experience in solving problems in areas of tactical training systems, information processing, space systems, and infrared counter-measures. Our capabilities span research, systems analysis, engineering development, high volume manufacturing, and total life cycle integrated logistics support for our products. MILES is an example of low cost, reliable equipment which performs a sophisticated and complex unit training task . And no one does it better...

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How to mobilize today's mobilization technology.



The more effectively you mobilize, the stronger your fighting force. It's that simple.

That's why the Army is stressing mobilization resource management. Putting real-time troop and equipment information at the fingertips of commanders at all levels creates a powerful force multiplier.

Implementing such a capability poses a complex technical challenge: the integration of multiple advanced hardware, software, and data communications technologies into a total information network.

That takes something special. The proven know-how and experience that only comes from a tailored team approach.

A team of Boeing and other industry leaders and specialists brings together people with proven expertise in systems architecture design, software, database management systems, communications, and security. Managed with Boeing's recognized skill in large-scale systems engineering and integration, systems deployment, operations and maintenance.

We face this challenge with confidence. After all, Boeing designed, assembled, integrated, and operates a similar system for our own business needs. An international network of communicating computers and more than 25,000 workstations and terminals. Supporting data transfer between major Boeing data centers and production facilities in Seattle, Wichita, Philadelphia, and Washington, D.C., as well as between literally thousands of customers, suppliers, and subcontractors.

With this kind of track record and the full-spectrum capabilities of the entire Boeing Team, we can supply cost-effective, state-of-the-art information systems that meet the Army's force and mobilization management requirements.

National defense demands commitment and dedication. In an emergency, effective response demands effective mobilization. The Boeing Team is prepared to serve those who serve — the total Army.

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Military technology and other governmental needs demand a wide variety of sophisticated equipment and systems . . . and those can vary from earthmoving machines to laser programs.

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We're problem solvers . . . with vast experience and a solid commitment of people and facilities. Our strength lies in the area of total system performance . . . and we're affordable. Dedication to provide unequalled response and innovation to meet your needs, today and tomorrow, is our pledge.

We have in-house capabilities to concept and design . . . analyze designs . . . build and test prototypes . . . and manufacture approved production machines with quality built in . . . not added on. From concept to completed systems, we offer it all.

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At Logicon, we help clear up communications. We've been a leader in C³I systems for many years, particularly in developing the technology used by the armed services to improve the interoperability of tactical data systems.

For example, under a $65-million contract, Logicon is developing a system to test and improve air defense identification techniques used by joint/allied Army and Air Force units in the European theater.

More than 100 C³I projects are now underway at Logicon, including the development of systems for interoperability testing, survivable communications, multi-level security and automated message handling.

If this is the kind of capability and performance you need in meeting the challenges of high technology and electronic systems development, then Logicon is the clear choice.



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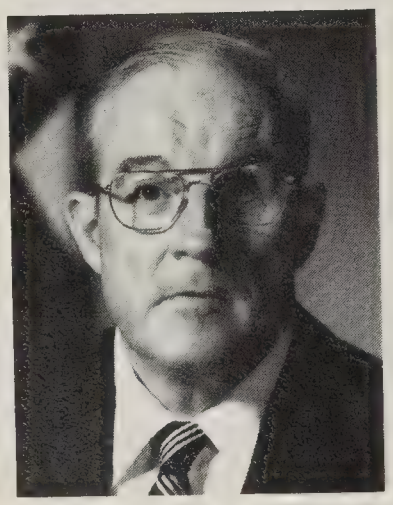


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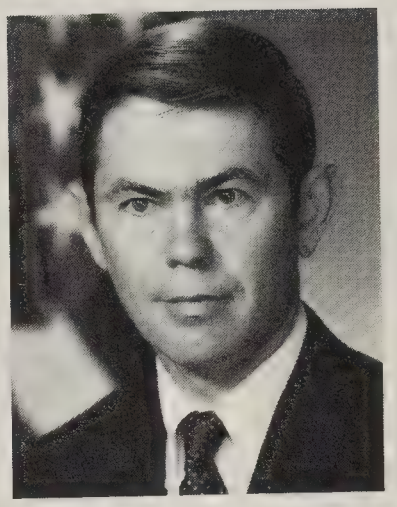
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Secretary of the Army



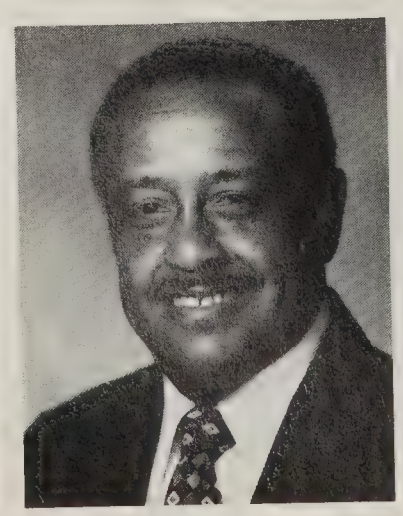
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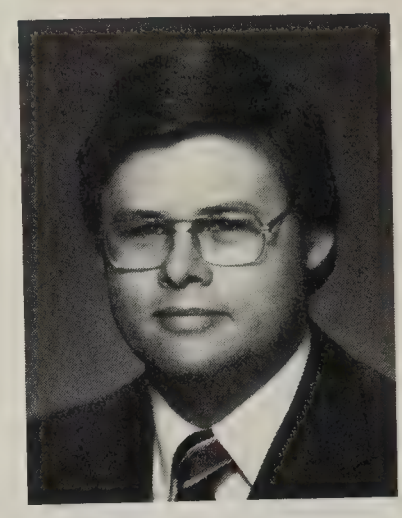
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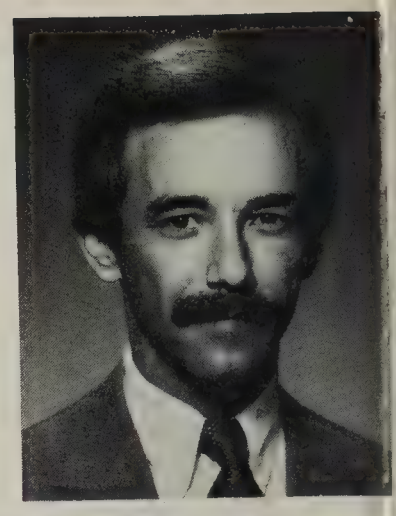
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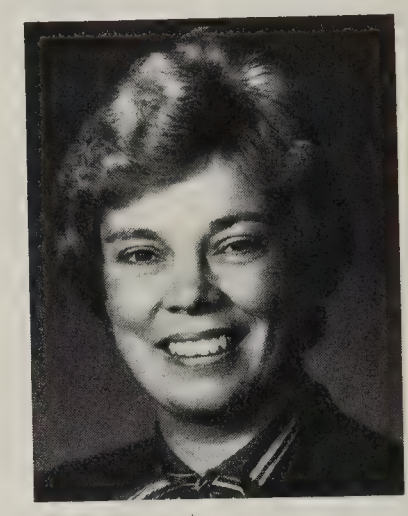
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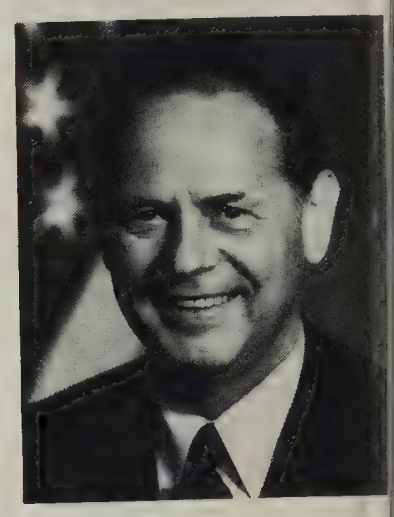
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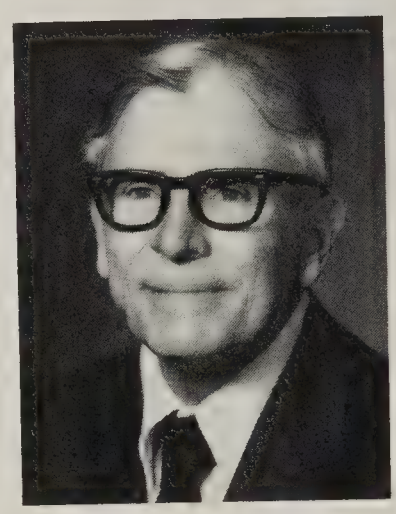
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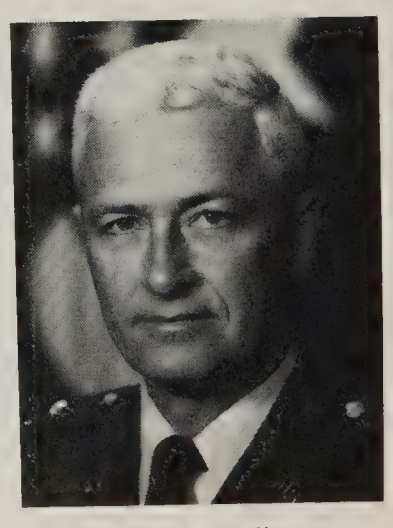
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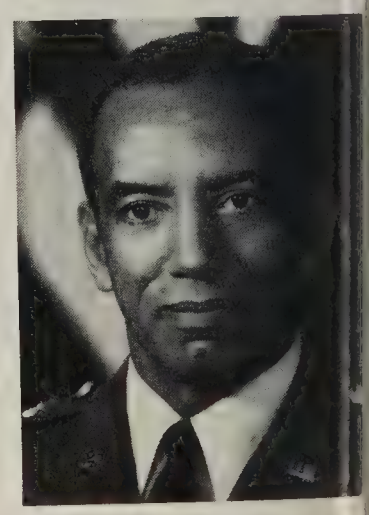
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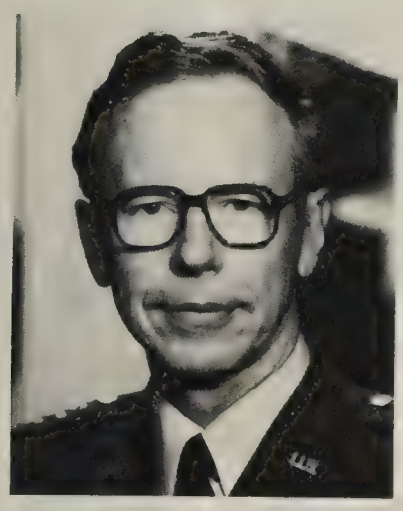


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Chief of Staff



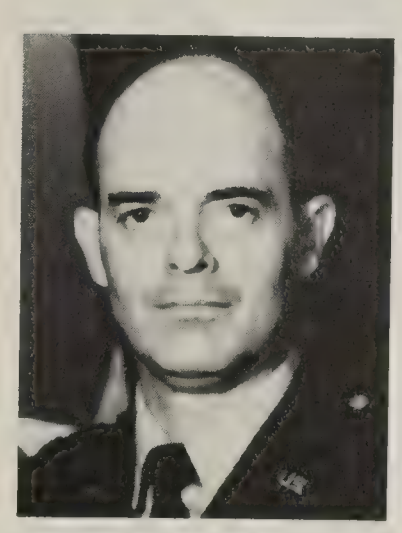
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BG Robert M. Bunker
Director, Management



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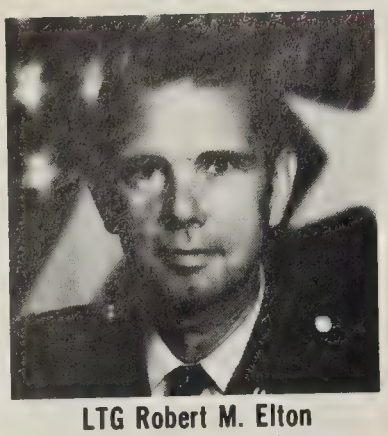
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Ballistic Missile
Defense Program Mgr.



SMA Glen E. Morrell
Sgt. Maj. of the Army

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DCS, Personnel



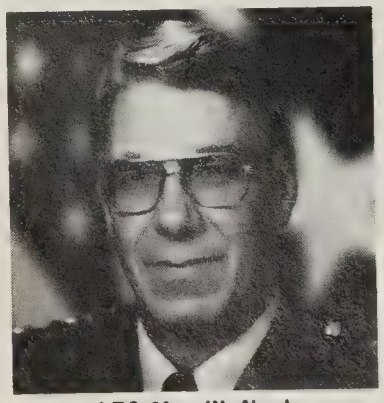
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LTG Benjamin F. Register Jr.
DCS, Logistics



LTG Louis C. Wagner Jr.
DCS, Research,
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LTG Max W. Noah
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Dir., Army Nat'l. Guard

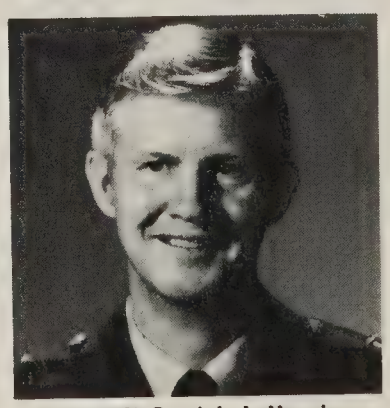
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The Judge Advocate General



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Mr. Harold L. Stugart
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SGM Juan A. Fraga

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SFC Evelyn B. Martin

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(Vacant)

Second U.S. Army
Ft. Gillem, Ga.
LTG Johnny J. Johnston
CSM Glendon H. Sidwell

Third U.S. Army
Ft. McPherson, Ga.
LTG Theodore G. Jenes Jr.
CSM Jack R. Kirk

Fourth U.S. Army
Ft. Sheridan, Ill.
LTG Edward C. Peter II
CSM C. W. Atkins

Fifth U.S. Army
Ft. Sam Houston, Tex.
LTG Louis C. Menetrey
CSM Ralph L. Phillips

Sixth U.S. Army
San Francisco, Calif.
LTG Robert Arter
CSM Raymond J. Alegria

I Corps
Ft. Lewis, Wash.
LTG Joseph T. Palastra Jr.
CSM Jackie L. Siggers

III Corps
Ft. Hood, Tex.
LTG Crosbie E. Saint
CSM George L. Horvath III

XVIII Airborne Corps
Ft. Bragg, N.C.
LTG James J. Lindsay
CSM Tadeusz Gaweda

1st Infantry Division (Mech)
Ft. Riley, Kan.
MG Ronald L. Watts
CSM Jerry A. Bradley

4th Infantry Division (Mech)
Ft. Carson, Colo.
MG Gerald T. Bartlett
CSM Robert F. Beach

5th Infantry Division (Mech)
Ft. Polk, La.
MG Kenneth C. Leuer
CSM Charles A. White
CSM Caleb T. Hale (USA Garrison)

7th Infantry Division (Light)
Ft. Ord, Calif.
MG William H. Harrison
CSM Leonard C. Dane

9th Infantry Division (Motorized)
Ft. Lewis, Wash.
MG Donald S. Pihl
CSM Christopher G. Hodge

10th Mountain Division (Light Infantry)
Ft. Drum, N.Y.
MG William S. Carpenter Jr.
CSM Southern W. Hewitt

24th Infantry Division (Mech)
Ft. Stewart, Ga.
MG Andrew L. Cooley
CSM Edward E. Garrett

82nd Airborne Division
Ft. Bragg, N.C.
MG Bobby B. Porter
CSM William J. McBride Jr.

101st Airborne Division (Air Assault)
Ft. Campbell, Ky.
MG Burton D. Patrick
CSM Nathaniel L. Moore
CSM Eddie L. Spears (USA Garrison)

1st Cavalry Division
Ft. Hood, Tex.
MG Michael J. Conrad
CSM A. C. Cotton

2nd Armored Division
Ft. Hood, Tex.
MG Richard A Scholtes
CSM Arlyn E. Wood

1st Special Operations Command
Ft. Bragg, N.C.
MG Leroy N. Suddath Jr.
CSM Stephen P. Holmstock

III Corps Artillery
Ft. Sill, Okla.
BG Dennis J. Reimer
CSM Homer E. Williams

172nd Infantry Brigade
Ft. Richardson, Alaska
MG Gerald H. Bethke
CSM Willie Cobb

193rd Infantry Brigade
Ft. Clayton, Panama
MG Frederick F. Woerner Jr.
CSM Thomas M. Berry

197th Infantry Brigade
Ft. Benning, Ga.
Col. James A. Musselman
CSM William D. Bell

18th Field Artillery Brigade
Ft. Bragg, N.C.
Col. James E. Tyndall
CSM David L. Hunt

75th Field Artillery Brigade
Ft. Sill, Okla.
Col. Michael J. Keaveney
CSM George W. Marley

212th Field Artillery Brigade
Ft. Sill, Okla.
Col. Carl R. Morin Jr.
CSM Walter F. Brooks

214th Field Artillery Brigade
Ft. Sill, Okla.
Col. Marshall R. McRee
CSM Jeffrey B. Little

11th Air Defense Artillery Brigade
Ft. Bliss, Tex.
Col. J. Morgan Jellett
CSM Joseph M. Natividad

35th Air Defense Artillery Brigade
Ft. Lewis, Wash.
Col. Peter C. Swenson
CSM Kenneth Corbisier

6th Cavalry (Air Combat) Brigade
Ft. Hood, Tex.
Col. Jack L. Turecek
CSM Wayne Flammond

194th Armored Brigade
Ft. Knox, Ky.
Col. Paul E. Funk
CSM Norman McCoy

1st Special Forces Group (Airborne)
Ft. Lewis, Wash.
Col. David J. Baratto
CSM Arthur Garcia

5th Special Forces Group (Airborne)
Ft. Bragg, N.C.
Col. Lawrence W. Duggan
CSM Forrest K. Foreman

7th Special Forces Group (Airborne)
Ft. Bragg, N.C.
Col. John D. Waghelstein
CSM Ivan Ivanov

10th Special Forces Group (Airborne)
Ft. Devens, Mass.
Col. James L. Zachary
(Vacant)

75th Infantry Regiment (Rangers)
Ft. Benning, Ga.
Col.(P) Wayne A. Downing
CSM Autrail Cobb

3rd Armored Cavalry Regiment
Ft. Bliss, Tex.
Col. James M. Lyle
CSM Harvey L. Reed Jr.

4th Psychological Operations Group
Ft. Bragg, N.C.
Col. Melvin E. Kriesel
CSM William H. Bissontz

National Training Center
Ft. Irwin, Calif.
BG(P) Edwin S. Leland Jr.
CSM Robert R. Poole

Ft. Devens, Mass.
MG Joseph J. Skaff
CSM James W. Favreau

Ft. McCoy, Wisc.
Col. W. W. Sorenson
CSM Richard Kieltsch

Ft. McPherson, Ga.
Col. Edward C. Hackney
CSM Harold L. McGaugh

Ft. Meade, Md.
Col. William R. Farquaharson Jr.
CSM Arthur Donohue

Ft. Sam Houston, Tex.
Col. Clarence H. Woliver
CSM John L. McCarter Sr.

Presidio of San Francisco
Col. Eugene D. Hawkins
CSM John P. Carvalho

Ft. Sheridan, Ill.
Col. Stanley E. Thomas
CSM James L. Cobbett

WESTERN COMMAND

Headquarters
Ft. Shafter, Hawaii
LTG Charles W. Bagnal
CSM Alexander Freitas

25th Infantry Division
Schofield Barracks, Hawaii
MG Claude M. Kicklighter
CSM Gary R. Carpenter

Support Command, Hawaii
Ft. Shafter, Hawaii
Col. David H. Helela
CSM Benjamin K. Waiolama

45th Support Group
Schofield Barracks, Hawaii
Col. Charles L. Herring
CSM Anthony C. Williams

TRAINING AND DOCTRINE COMMAND

Headquarters
Ft. Monroe, Va.
Gen. William R. Richardson
CSM William J. H. Peters

Combined Arms Center
Ft. Leavenworth, Kan.
LTG Robert W. RisCassi
CSM John W. Gillis

Logistics Center
Ft. Lee, Va.
LTG Robert L. Bergquist
CSM Billy E. Prysock

Soldier Support Center
Ft. Benjamin Harrison, Ind.
MG Maurice O. Edmonds
CSM Raymond J. Eubank

Combat Developments Experimentation Center
Ft. Ord, Calif.
Dr. Marion R. Bryson
CSM Willie J. Peggs

Combined Arms Test Activity
Ft. Hood, Tex.
MG James E. Drummond
1SG Douglas M. Henley

Combined Arms Operations Research Activity
Ft. Leavenworth, Kan.
BG David M. Maddox
SFC Felix A. Medina

Operations and Research Activity
White Sands Missile Range, N.M.
Dr. Wilbur B. Payne
SGM Jo L. Campbell

Systems Analysis Activity
White Sands Missile Range, N.M.
Mr. Leon F. Goode
SGM Jo L. Campbell

Training Support Center
Ft. Eustis, Va.
BG John W. Nicholson
MSG(P) Luther C. Elmore

Army Training Board
Ft. Eustis, Va.
Col. Andrew P. O'Meara Jr.

First ROTC Region
Ft. Bragg, N.C.
Col. William K. Seago (Acting)
CSM James E. Pitchford

Second ROTC Region
Ft. Knox, Ky.
BG Jerry A. White
CSM A. L. Jennings

Third ROTC Region
Ft. Riley, Kan.
BG Myrna H. Williamson
SGM Daniel R. Varner

Fourth ROTC Region
Ft. Lewis, Wash.
BG(P) Robert E. Wagner
SGM Calvin L. Foster

TRAINING CENTERS

Ft. Benning, Ga.
MG John W. Foss
CSM Roy C. Owens

Ft. Bliss, Tex.
MG Donald R. Infante
CSM Raymond H. Godfrin

Ft. Dix, N.J.
MG Thomas W. Kelly
CSM John E. Sanchez Jr.

Ft. Gordon, Ga.
MG Thurman D. Rodgers
CSM Cecil B. Miles

Ft. Jackson, S.C.
MG Robert B. Solomon
CSM Stanley M. Thornburgh

Ft. Knox, Ky.
MG Frederic J. Brown
CSM John M. Stephens

Ft. Leonard Wood, Mo.
MG James W. van Loben Sels
CSM Jacob E. Haller

Ft. McClellan, Ala.
MG Gerald G. Watson
CSM Alonzo Jones

Ft. Sill, Okla.
MG Eugene S. Korpal
CSM Oren Bevins

SCHOOLS AND CENTERS

Air Defense Artillery Center & School
Ft. Bliss, Tex.
MG Donald R. Infante
CSM Raymond H. Godfrin

Armor Center & School
Ft. Knox, Ky.
MG Frederic J. Brown
CSM John M. Stephens

Aviation Center
Ft. Rucker, Ala.
MG Ellis D. Parker
CSM T. Ray Kirkland

Aviation Logistics School
Ft. Eustis, Va.
MG Fred E. Elam
CSM John L. Upchurch

Chaplain Center & School
Ft. Monmouth, N.J.
Ch. (Col.) Charles J. McDonnell
CSM James J. Shonefeld

Chemical School
Ft. McClellan, Ala.
MG Gerald G. Watson
CSM Bobby M. Weston

Command & General Staff College
Ft. Leavenworth, Kan.
LTG Robert W. RisCassi
SGM Cepha Drummond Jr.

Defense Information School
Ft. Benjamin Harrison, Ind.
Col. Gary L. Werner
SGM Marlon S. Miles

Defense Language Institute Foreign Language Center
Presidio of Monterey, Calif.
Col. Monte R. Bullard
CSM Charles R. Beale

Engineer Center & School
Ft. Belvoir, Va.
MG Richard S. Kem
CSM Charles T. Tucker

Field Artillery Center & School
Ft. Sill, Okla.
MG Eugene S. Korpal
CSM Oren Bevins

Infantry Center & School
Ft. Benning, Ga.
MG John W. Foss
CSM Roy C. Owens

Intelligence Center & School
Ft. Huachuca, Ariz.
MG Julius Parker Jr.
CSM Robert Retter

Intelligence School
Ft. Devens, Mass.
Col. Francis X. Toomey
CSM John Clarke

JFK Special Warfare Center
Ft. Bragg, N.C.
BG James A. Guest
CSM Jeffrey H. Raker

Judge Advocate General's School
Charlottesville, Va.
Col. Paul J. Rice

Military Police School
Ft. McClellan, Ala.
BG David H. Stem
CSM Roland Gaddy

Ordnance Center & School
Aberdeen Proving Ground, Md.
MG William E. Potts
CSM Robert S. Abbott

Ordnance, Missile & Munitions Center & School
Redstone Arsenal, Ala.
Col. Paul Wilbur
CSM Gene A. Davis

Quartermaster Center/School & Ft. Lee
Ft. Lee, Va.
MG Eugene L. Stillions Jr.
CSM Rosvelt Martain

School of the Americas
Ft. Benning, Ga.
Col. Miguel A. Garcia
SGM Jose Gonzalez

Sergeants Major Academy
Ft. Bliss, Tex.
Col. Fitzhugh H. Chandler Jr.
CSM Larry J. Hampton

Signal Center & School
Ft. Gordon, Ga.
MG Thurman D. Rodgers
CSM Cecil B. Miles

Soldier Support Institute
Ft. Benjamin Harrison, Ind.
MG Maurice O. Edmonds
CSM Raymond J. Eubank

Transportation Center & School
Ft. Eustis, Va.
MG Fred E. Elam
CSM William H. Fountain

ARMY INTELLIGENCE AND SECURITY COMMAND

Arlington Hall Station, Va.
MG Harry E. Soyster
CSM Sammy U. Wise

INFORMATION SYSTEMS COMMAND

Headquarters
Ft. Huachuca, Ariz.
LTG Emmett Paige Jr.
CSM Raymond R. Polk

5th Signal Command (Europe)
Worms, W. Ger.
BG Leo M. Childs
CSM Martin Manglona

7th Signal Command (CONUS)
Ft. Ritchie, Md.
MG John T. Myers
CSM Andrew H. Riggins

11th Signal Brigade
Ft. Huachuca, Ariz.
Col. James M. Harrison
CSM Bobbie L. Frank

Information Systems Command Western Command
Ft. Shafter, Hawaii
Col. Kenneth Campbell
SGM John E. Kivela Jr.

1st Signal Brigade
Seoul, South Korea
Col. Richard J. Mallion
CSM Samuel P. Thompson

Information Systems Command-Japan
Camp Zama, Japan
Col. John Neary
CSM Robert L. Horton

Information Systems Management Activity
Ft. Monmouth, N.J.
BG Alonzo E. Short Jr.

Information Systems Engineering Command
Ft. Belvoir, Va.
MG Alan B. Salisbury
CSM Francis M. Meads

CRIMINAL INVESTIGATION COMMAND

Falls Church, Va.
MG Eugene R. Cromartie
CSM Thomas R. Cheshire Jr.

CORPS OF ENGINEERS

Headquarters
Washington, D.C.
LTG Elvin R. Heiberg III
CSM Rudolph F. Voight

Europe Division
Frankfurt, W. Ger.
BG James W. Ray

Huntsville Division
Huntsville, Ala.
Col. Rudolph E. Abbott

Lower Mississippi Valley Division
Vicksburg, Miss.
BG Thomas A. Sands

Middle East Division
Winchester, Va.
(Vacant)

Missouri River Division
Omaha, Neb.
BG Charles E. Dominy

New England Division
Waltham, Mass.
Col. Thomas A. Rhen

North Atlantic Division
New York, N.Y.
BG Paul F. Kavanaugh

North Central Division
Chicago, Ill.
BG Joseph Pratt

North Pacific Division
Portland, Ore.
BG(P) George R. Robertson

Ohio River Division
Cincinnati, Ohio
BG Peter J. Offringa

Pacific Ocean Division
Honolulu, Hawaii
BG Robert H. Ryan

South Atlantic Division
Atlanta, Ga.
BG Charles E. Edgar III

South Pacific Division
San Francisco, Calif.
BG Donald J. Palladino

Southwestern Division
Dallas, Tex.
BG(P) Jerome B. Hilmes

HEALTH SERVICES COMMAND

Headquarters
Ft. Sam Houston, Tex.
MG Floyd W. Baker
CSM Howard R. Harrell

Brooke Army Medical Center
Ft. Sam Houston, Tex.
BG Girard Seitter III
CSM Carrol G. Chittenden

Dwight David Eisenhower Army Medical Center
Ft. Gordon, Ga.
BG Alcide M. LaNoue
CSM Halford K. Hales

Fitzsimons Army Medical Center
Aurora, Colo.
BG Philip K. Russell
CSM Kenneth R. Glidewell

Letterman Army Medical Center
Presidio of San Francisco, Calif.
BG Frederick N. Bussey
CSM Robert L. Yates

Madigan Army Medical Center
Tacoma, Wash.
BG Darryl H. Powell
CSM C. W. Mays

Tripler Army Medical Center
Hawaii
MG Tracy E. Strevey Jr.
CSM Kramer D. Regan

Walter Reed Army Medical Center
Washington, D.C.
MG Lewis A. Mologne
CSM Bernard J. Quinn

William Beaumont Army Medical Center
El Paso, Tex.
BG John E. Major
CSM Robert L. Adams

Academy of Health Sciences
Ft. Sam Houston, Tex.
MG William P. Winkler Jr.
CSM Joe D. McClain

Army Aeromedical Center
Ft. Rucker, Ala.
Col. Elray R. Jenkins
1SG Francis E. Myers

Army Environmental Hygiene Agency
Aberdeen Proving Ground, Md.
Col. Frank E. McDermott
(Vacant)

U.S. Army Garrison
Ft. Detrick, Md.
Col. Mark Hoke
CSM George H. Tietze

MILITARY TRAFFIC MANAGEMENT COMMAND

Headquarters
Falls Church, Va.
MG Harold I. Small
CSM Leno R. Veney

Eastern Area
Bayonne, N.J.
BG Paul C. Hurley
SGM John F. Richardson

Western Area
Oakland Army Base, Calif.
BG John H. Stanford
SGM John Doyle Jr.

MILITARY DISTRICT OF WASHINGTON

Ft. Lesley J. McNair, D.C.
MG John L. Ballantyne III
CSM William R. Nowell

U.S. ARMY, EUROPE

Headquarters USAREUR & Seventh U.S. Army
Heidelberg, W. Ger.
Gen. Glenn K. Otis
CSM James B. Craft

V Corps
Frankfurt, W. Ger.
LTG Robert L. Wetzel
CSM James D. Ligon

VII Corps
Stuttgart, W. Ger.
LTG Andrew P. Chambers
CSM Werner Rauscher

3rd Infantry Division (Mech)
Würzburg, W. Ger.
MG George R. Stotser
CSM Reynold Voisine

8th Infantry Division (Mech)
Bad Kreuznach, W. Ger.
MG Orren R. Whiddon
CSM Samuel Smith

1st Armored Division
Ansbach, W. Ger.
MG Dave R. Palmer
CSM Danny C. Cline

3rd Armored Division
Frankfurt, W. Ger.
MG Richard G. Graves
CSM Daniel McDonald

32nd Air Defense Command
Darmstadt, W. Ger.
MG Victor J. Hugo Jr.
CSM Grady Thomas

V Corps Artillery
Frankfurt, W. Ger.
BG Ross W. Crossley
CSM Henry G. Goodwin

VII Corps Artillery
Augsburg, W. Ger.
BG Howard C. Eggleston
CSM Jack Mikesell

1st Infantry Division (Forward)
Göppingen, W. Ger.
BG(P) James B. Allen Jr.
CSM Walter Hawley

2nd Armored Division (Forward)
Garlstedt, W. Ger.
BG William F. Streeter
CSM George W. Simmons Jr.

Berlin Brigade
BG(P) Thomas N. Griffin Jr.
CSM Gary D. Donalson

17th Field Artillery Brigade
Augsburg, W. Ger.
Col. Ronan I. Ellis
CSM Charles M. Garner

41st Field Artillery Brigade
Babenhausen, W. Ger.
Col. Craig H. Leyda
CSM Timothy Eldridge Jr.

42nd Field Artillery Brigade
Giessen, W. Ger.
Col. William L. Jenkins
CSM J. S. Annalla

56th Field Artillery Brigade
Schwäbisch-Gmünd, W. Ger.
BG Raymond E. Haddock
CSM Theodore Jackson

72nd Field Artillery Brigade
Wertheim, W. Ger.
Col. B. I. Legge
CSM Larry Pippin

210th Field Artillery Brigade
Herzogenaurach, W. Ger.
Col. Charles M. Hood
CSM Lamar Mallette Jr.

2nd Armored Cavalry Regiment
Nürnberg, W. Ger.
Col. John H. Tilelli
CSM Robert Wilson

11th Armored Cavalry Regiment
Fulda, W. Ger.
Col. Joe G. Driskill
CSM Robert L. Williams

Southern European Task Force
Vincenza, Italy
MG Harold M. Davis Jr.
CSM Roberto S. Rivera

U.S. Command Berlin
MG John H. Mitchell
CSM Gary D. Donalson

1st Personnel Command
Schwetzingen, W. Ger.
BG(P) William H. Gourley
CSM John H. Belyea Jr.

2nd Support Command
Nellingen, W. Ger.
BG John P. Dreska
CSM Ozell Ford

3rd Support Command
Wiesbaden, W. Ger.
BG William B. McGrath
(Vacant)

7th Support Command
Rheinberg, W. Ger.
Col. R. L. DeGrant
CSM V. Cartwright

21st Support Command
Kaiserslautern, W. Ger.
LTG John D. Bruen
CSM J. W. Hardin

4th Transportation Command
Oberursel, W. Ger.
Col. Robert H. Pratt
CSM Dencil L. Gaines

Seventh Army Training Command
Grafenwoehr, W. Ger.
BG Philip H. Mallory
CSM Thomas P. Murphy

7th Medical Command
Heidelberg, W. Ger.
MG Frank F. Ledford Jr.
CSM Lawrence Gallino

18th Engineer Brigade
Karlsruhe, W. Ger.
Col. Carl O. Magnell
CSM Harold A. Thomas

130th Engineer Brigade
Schwaebisch-Hall, W. Ger.
Col. Marvin E. Mitchiner Jr.
CSM Floyd W. Walker Jr.

22nd Signal Brigade
Frankfurt, W. Ger.
Col. R. D. Conte
CSM M. S. Howell

93rd Signal Brigade
Ludwigsburg, W. Ger.
Col. Clayton L. Vannes
CSM James R. Farley

59th Ordnance Brigade
Pirmasens, W. Ger.
BG Marvin D. Brailsford
CSM Charles E. Speller

18th Military Police Brigade
Frankfurt, W. Ger.
Col. Ted S. Chesney
CSM C. E. Smith

EIGHTH U.S. ARMY

Headquarters
Seoul, South Korea
Gen. William J. Livsey
CSM Julius W. Gates

Combined Field Army (ROK/U.S.)
Uijongbu, South Korea
LTG James E. Moore Jr.
CSM Michael N. Martin

2nd Infantry Division
Tongduchon, South Korea
MG Gary E. Luck
CSM Bobby C. Boothe

19th Support Command
Taegu, South Korea
BG Charles M. Murray
CSM Lowell E. Dickinson

U.S. ARMY, JAPAN

Headquarters
Zama, Japan
LTG Charles W. Dyke
CSM Donald C. Cubbison III

SENIOR ARMY OFFICERS IN SPECIAL ASSIGNMENTS

Supreme Allied Commander, Europe
Gen. Bernard W. Rogers

Commander in Chief, U.S. Readiness Command
Gen. Fred K. Mahaffey

U.S. Representative, NATO Military Committee
Gen. Jack N. Merritt

Director, National Security Agency
LTG William E. Odom

Deputy Assistant Secretary of Defense, Mobilization Planning
LTG Vaughn O. Lang

Director, Defense Logistics Agency
LTG Donald M. Babers

Director, Plans & Policy, J5, OJCS
LTG Dale A. Vesser

Director, Command, Control & Communications Systems, OJCS
LTG Clarence E. McKnight Jr.

Commander in Chief, U.S. Central Command
Gen. Robert C. Kingston

Commander in Chief, U.S. Southern Command
Gen. John R. Galvin

Chief of Staff, U.S. European Command
LTG Howard G. Crowell Jr.

Chief of Staff, Allied Forces, Southern Europe
LTG Thomas F. Healy

Chief of Staff, U.S. Pacific Command
LTG William H. Schneider

Deputy Chairman, NATO Military Committee
LTG Paul S. Williams Jr.

Deputy Director General, NATO Integrated Communications System Management Agency
LTG James M. Rockwell

Chairman, Inter-American Defense Board
LTG Robert L. Schweitzer

NATIONAL GUARD UNITS

26th Infantry Division
Boston, Mass.
MG Joseph P. Hegarty
CSM Charles W. Yetton

28th Infantry Division
Harrisburg, Pa.
MG Vernon E. James
CSM Richard L. Fonner

29th Infantry Division (Light)
Ft. Belvoir, Va.
MG James A. Baber III
CSM Dorse E. Cooper

35th Infantry Division (Mech)
Ft. Leavenworth, Kan.
MG Colin C. Campbell
CSM Ross R. Knitter

38th Infantry Division
Indianapolis, Ind.
MG Kenneth W. Himsel
CSM Fred J. Beam

40th Infantry Division (Mech)
Long Beach, Calif.
MG William J. Jefferds
CSM John W. Jackson

42nd Infantry Division
New York, N.Y.
MG Vincent W. Lanna
CSM Basilios Telegadis

47th Infantry Division
St. Paul, Minn.
MG Edward W. Waldon
CSM Richard P. Cich

49th Armored Division
Austin, Tex.
MG James B. McGoodwin
CSM James H. Merritt

50th Armored Division
Somerset, N.J.
MG Melvin J. Crain
CSM Judson Fuller

29th Infantry Brigade
Honolulu, Hawaii
Col. Donald M. Oura
(Vacant)

30th Separate Infantry Brigade (Mech)
Clinton, N.C.
BG Kenneth R. Newbold
CSM Glenn W. Goodson

32nd Separate Infantry Brigade (Mech)
Milwaukee, Wisc.
BG Charles F. Scharine
CSM John E. Zuelzke

33rd Separate Infantry Brigade
Chicago, Ill.
BG Thomas W. Reynolds
CSM Allen J. Kirkpatrick

39th Separate Infantry Brigade
Little Rock, Ark.
BG James A. Ryan
CSM Donald R. Cain

41st Infantry Brigade
Portland, Ore.
BG Ervin T. Osbourn
CSM Rommie J. Walker

45th Separate Infantry Brigade
Edmond, Okla.
BG James J. Wasson
CSM Carmon L. Allen

48th Infantry Brigade (Mech)
Macon, Ga.
BG William K. McDaniel
CSM Billy C. Long

53rd Separate Infantry Brigade
Tampa, Fla.
BG Richard G. Weinberg
CSM Joseph D. Tomko

58th Infantry Brigade
Baltimore, Md.
BG Boyd M. Cook
SGM Wilson J. Thornton

73rd Separate Infantry Brigade
Columbus, Ohio
BG Clyde E. Gutzwiller
SGM Han W. Woesner

81st Separate Infantry Brigade (Mech)
Seattle, Wash.
BG Daniel J. Sullivan
CSM Allen L. Fontz

92nd Separate Infantry Brigade
San Juan, P.R.
Col. Arnaldo J. Dejesus
CSM Carlos Rivera

116th Infantry Brigade
Staunton, Va.
BG Gilbert J. Sullivan
CSM Robert P. Kuykendall

218th Separate Infantry Brigade (Mech)
Newberry, S.C.
Col. Bobby L. Matthews
SGM Wilbur A. Nichols

256th Infantry Brigade (Mech)
Lafayette, La.
BG Frank M. Denton
CSM Nabrie Langlinios

19th Special Forces Group (Airborne)
Salt Lake City, Utah
Col. James G. Martin
CSM Richard Veenendaal

20th Special Forces Group (Airborne)
Birmingham, Ala.
Col. James L. Horak
CSM Bobby York

207th Infantry Group (Scout)
Anchorage, Alaska
LTC Russell Gillespie
CSM Ray B. Harris

30th Separate Armored Brigade
Jackson, Tenn.
BG Thomas D. Farmer
CSM Donald H. Senter

31st Separate Armored Brigade
Tuscaloosa, Ala.
BG Russell E. Summerlin
CSM Ronald J. Honeycutt

155th Armored Brigade
Tupelo, Miss.
BG Samuel E. Fleming Jr.
CSM Kenneth J. Hester

107th Armored Cavalry Regiment
Cleveland, Ohio
Col. John E. Martin
CSM Nathan S. Monastra

116th Armored Cavalry Regiment
Twin Falls, Idaho
Col. John W. Baker
MSG Gary D. Premoe

163rd Armored Cavalry Regiment
Bozeman, Mont.
Col. Clifford E. Abbott
CSM Benjamin G. Stewart

278th Armored Cavalry Regiment
Knoxville, Tenn.
Col. Virgil B. Isham
CSM Joseph G. Blackburn

I Corps Artillery
Salt Lake City, Utah
BG James M. Miller
CSM Kenneth C. Lunceford

45th Field Artillery Brigade
Enid, Okla.
Col. Tommy G. Alsip
MSG Don C. Clinton

57th Field Artillery Brigade
Whitefish Bay, Wisc.
Col. Lawrence P. Kaplan
CSM Robert Schwingle

103rd Field Artillery Brigade
Providence, R.I.
Col. Cyril E. Frost Jr.
CSM William F. Budnik

113th Field Artillery Brigade
Greensboro, N.C.
Col. James R. Martin
CSM Harold W. Harrold

115th Field Artillery Brigade
Cheyenne, Wyo.
LTC Henry Castillon
CSM Ralph Daniels

118th Field Artillery Brigade
Savannah, Ga.
Col. Elton F. Hinson
CSM Rodney J. Harville

135th Field Artillery Brigade
Sedalia, Mo.
Col. Dale L. Strannigan
CSM Charles M. Blair

138th Field Artillery Brigade
Lexington, Ky.
Col. Julius L. Berthold
CSM Thomas P. Pendleton

142nd Field Artillery Brigade
Fayetteville, Ark.
Col. Richard L. Holt Jr.
CSM Allen L. Dunn

147th Field Artillery Brigade
Pierre, S.D.
Col. Jacob J. Krull
CSM Orlo R. Bjerk

151st Field Artillery Brigade
Sumter, S.C.
Col. Louis C. Addison
CSM Lloyd H. Floyd

153rd Field Artillery Brigade
Glendale, Ariz.
Col. Benny P. Anderson
CSM Francis L. Ludington

169th Field Artillery Brigade
Aurora, Colo.
Col. Marion Carmickle
CSM Roland D. Weaver

196th Field Artillery Brigade
Chattanooga, Tenn.
Col. Carl E. Levi
CSM Robert Davis

197th Field Artillery Brigade
Manchester, N.H.
LTC Francis E. Merrill
CSM David F. Follansbee

209th Field Artillery Brigade
Rochester, N.Y.
Col. Joseph N. Brill
CSM Jerome E. Flye

224th Field Artillery Brigade
Sandston, Va.
LTC Terry Tyler
CSM Robert A. Eldredge

227th Field Artillery Brigade
Miami, Fla.
Col. Eugene M. Bass
CSM George H. Van Kessel

631st Field Artillery Brigade
Grenada, Miss.
Col. James H. Powell Jr.
CSM Allen Taylor

111th Air Defense Artillery Brigade
Albuquerque, N.M.
BG George W. Treadwell
CSM Dick M. Gallegos

16th Engineer Brigade
Columbus, Ohio
BG Ronald Bowman
SGM Larry Meade

30th Engineer Brigade
Charlotte, N.C.
BG Furman P. Bodenheimer Jr.
CSM Fred E. Hudson

35th Engineer Brigade
St. Louis, Mo.
BG Charles F. Blattner
SGM Bill J. Adams

194th Engineer Brigade
Nashville, Tenn.
BG Wytle Brown III
CSM Billy J. Law

112th Medical Brigade
Worthington, Ohio
BG Aaron K. Warren
SGM L. D. Ball

175th Medical Brigade
Sacramento, Calif.
BG Douglas D. Bradley
CSM Erwin J. Nitschman

213th Medical Brigade
Jackson, Miss.
BG Wafford H. Merrell Jr.
CSM Harold L. Davis

43rd Military Police Brigade
Providence, R.I.
BG Normand A. Trudeau
CSM Anthony Martini

49th Military Police Brigade
Alameda, Calif.
BG Ralph C. Marinaro
CSM Frank R. Diaz

177th Military Police Brigade
Detroit, Mich.
BG Richard D. DeMara
CSM Martin Zinz

260th Military Police Brigade
Washington, D.C.
BG Erneido A. Oliva
CSM Jerome V. Brigham

261st Signal Command
Dover, Del.
MG William H. Duncan
CSM Kenneth F. Sutton

142nd Signal Brigade
Decatur, Ala.
BG Teddy E. Williams
CSM Johnny Parker Jr.

228th Signal Brigade
Spartanburg, S.C.
BG John M. Hilliard Jr.
CSM George C. Young

167th Support Corps Command
Birmingham, Ala.
MG Ivan R. Smith
CSM James D. Gilbert

184th Transportation Brigade
Laurel, Miss.
BG Thomas R. Hearn Jr.
CSM Thomas E. Davis

STATE ADJUTANTS GENERAL

Alabama
MG William A. Hornsby
CSM Cecil D. Monk

Alaska
MG Edward G. Pagano
CSM Dennis W. Metrokin

Arizona
MG Donald L. Owens*
(Vacant)

Arkansas
MG Fred M. Carter
SGM Billy E. Thompson Sr.

California
MG Willard A. Shank
CSM James E. Herron

Colorado
MG John L. France*
CSM Robert M. Cox

Connecticut
MG John T. Gereski
CSM Anthony V. Savino

Delaware
MG Joseph M. Lank
CSM William A. Sharpe

District of Columbia
MG Calvin G. Franklin (CG)
CSM William G. Matthews Jr.

Florida
MG Robert F. Ensslin Jr.
CSM Allen H. Crosby

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MG Joseph W. Griffin
CSM Dempsey Q. Logue

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BG Frank C. Torres Jr.*
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BG Alexis T. Lum
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BG Darrell V. Manning*
CSM Larry W. Steele

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MG Harold G. Holesinger*
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MG Alfred F. Ahner
CSM Morris F. Quisenberry

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MG Warren G. Lawson
CSM John F. Kline

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MG Warren D. Hodges
CSM Sheldon J. Salter

Massachusetts
MG Anthony C. Spadorcia
SGM J. J. Ray Roy

Michigan
MG Vernon J. Andrews
(Vacant)

Minnesota
MG James G. Sieben
CSM James L. Wolcott

Mississippi
MG Nathaniel G. Troutt
CSM James E. Maske

Missouri
MG Charles M. Kiefner
CSM Joseph J. Kremer

Montana
MG James W. Duffy
CSM Larry R. Westfall

Nebraska
MG James Carmona
CSM Thurlow P. Noble

Nevada
MG Robert J. Dwyer*
CSM Walter W. Willson

New Hampshire
MG Lloyd M. Price
CSM Richard A. Nelson

New Jersey
MG Francis R. Gerard*
CSM James L. R. Smith

New Mexico
MG Edward D. Baca
CSM Thomas L. Garcia

New York
MG Vito J. Castellano
CSM Claude P. Imagna

North Carolina
MG Russell H. Powers
CSM W. P. Register

North Dakota
MG Alexander P. MacDonald*
CSM Raymond D. Scharonowske

Ohio
MG Raymond R. Galloway
CSM William Oxley

Oklahoma
MG Robert M. Morgan
CSM William G. Evans

Oregon
MG Richard A. Miller
CSM Alvin B. Reed

Pennsylvania
MG Richard M. Scott*
CSM James M. McDonald

Puerto Rico
MG Alfredo J. Mora
CSM Carlos A. Rivera

Rhode Island
MG John W. Kiely
CSM Raymond A. Morris

South Carolina
MG T. Eston Marchant Jr.
CSM Jack G. Black

South Dakota
MG Ronald F. Williamson
CSM Richard A. Trankle

Tennessee
MG Carl D. Wallace
CSM Howard T. Lewis

Texas
MG James T. Dennis
CSM George A. Petersor

Utah
MG John L. Matthews*
CSM Duane L. Wilson

Vermont
MG Donald E. Edwards
CSM Louis D. Lertola

Virginia
MG John G. Castles
CSM James R. Flanary

Virgin Islands
BG Ernest R. Morgan
CSM Albert Hewitt

Washington
MG George E. Coates
CSM Durwood Johnson

West Virginia
MG John A. Wilson III*
CSM Osa M. Young

Wisconsin
MG Raymond A. Matera*
CSM Roger J. Chladek

Wyoming
MG James L. Spence
CSM Rusty J. Griffin

* Indicates incumbent is a member of the Air National Guard

ARMY RESERVE COMMANDS AND UNITS

63rd Army Reserve Command
Los Alamitos, Calif.
MG Daniel C. Helix
CSM Daniel E. Black

77th Army Reserve Command
Ft. Totten, N.Y.
BG George E. Barker
CSM Lewis Facchina

79th Army Reserve Command
Willow Grove, Pa.
MG Richard E. Leithiser
CSM Benjamin F. Gorman

81st Army Reserve Command
East Point, Ga.
MG Robert Q. Jones
CSM Clement L. McConnel Jr.

83rd Army Reserve Command
Columbus, Ohio
MG Norman W. Martell
CSM John G. Zinkhow

86th Army Reserve Command
Forest Park, Ill.
(Vacant)
CSM Richard Kritsch

88th Army Reserve Command
Ft. Snelling, Minn.
BG Roger W. Sandler
CSM Robert S. Williams

89th Army Reserve Command
Wichita, Kan.
MG Jack Strukel Jr.
CSM James C. Nichols

90th Army Reserve Command
San Antonio, Tex.
MG Elvin J. Schofield
CSM J. B. Rawlings III

94th Army Reserve Command
Hanscom AFB, Mass.
MG Herbert J. Riley
CSM William H. Monahan

96th Army Reserve Command
Ft. Douglas, Utah
MG Richard O. Christiansen
CSM Robert E. Peterson

97th Army Reserve Command
Ft. Meade, Md.
MG Roger R. Blunt
CSM Edward L. Threat

99th Army Reserve Command
Oakdale, Pa.
MG George V. Bauer
CSM Fred Fair

102nd Army Reserve Command
St. Louis, Mo.
MG Albert E. Gorsky
CSM Robert F. Stritzel

120th Army Reserve Command
Ft. Jackson, S.C.
MG Berlyn K. Sutton
CSM Thomas D. Workman

121st Army Reserve Command
Birmingham, Ala.
MG Robert O. Bugg
CSM Jesus Julid Sanchez

122nd Army Reserve Command
Little Rock, Ark.
MG John E. Gecks
CSM William Armstrong

123rd Army Reserve Command
Ft. Benjamin Harrison, Ind.
BG Murray E. Cantrall
CSM Gary W. Allen

124th Army Reserve Command
Ft. Lawton, Wash.
MG Garnet R. Reynolds
CSM William W. Carr

125th Army Reserve Command
Nashville, Tenn.
MG Dennis R. Jones
(Vacant)

IX Corps (Augmentation)
Ft. DeRussy, Hawaii
BG Edward Y. Hirata
SGM Stanley Okamura

70th Division (Training)
Livonia, Mich.
MG James L. Pelton
CSM Samuel S. Donahoo

76th Division (Training)
West Hartford, Conn.
MG John Ricottilli Jr.
CSM Philip A. Twomey

78th Division (Training)
Edison, N.J.
MG William P. Sylvester Jr.
CSM Daniel P. Semenza

80th Division (Training)
Richmond, Va.
MG John P. Henderson Jr.
CSM Robert H. Riley

84th Division (Training)
Milwaukee, Wisc.
BG Vance Coleman
CSM Donald Rosenbauer

85th Division (Training)
Chicago, Ill.
MG Angelo D. Juarez
CSM Edward Jakudczak

91st Division (Training)
Sausalito, Calif.
MG Robert S. Holmes
CSM Wilbur L. Jiggetts Jr.

95th Division (Training)
Midwest City, Okla.
MG Harold J. Wages
CSM Darrel L. Jaro

98th Division (Training)
Rochester, N.Y.
MG Norbert J. Rappl
CSM Henry Curtis

100th Division (Training)
Louisville, Ky.
MG Roy C. Gray Jr.
CSM Russell T. Southworth

104th Division (Training)
Vancouver Barracks, Wash.
BG Rudolph E. Hammond
CSM Gary W. Newman

108th Division (Training)
Charlotte, N.C.
MG Charles J. Whisnant
CSM Henry Chapin

157th Infantry Brigade (Separate) (Mech)
Horsham, Pa.
BG John L. Kotcho
SGM Richard Bender

187th Infantry Brigade (Separate)
Ft. Devens, Mass.
Col. Thomas C. Stones
CSM Frank C. Mower

205th Infantry Brigade
Ft. Snelling, Minn.
Col. David M. Adamson
CSM Harley D. Kaiser

11th Special Forces Group (Airborne)
Ft. Meade, Md.
Col. Wilson C. Barnes
CSM Albert Weed

12th Special Forces Group (Airborne)
Arlington Heights, Ill.
Col. William C. Cockerham
CSM Donald R. McLane

428th Field Artillery Brigade
South Bend, Ind.
Lt. Col. Francis T. Mataranglo
CSM Emery J. Papp

434th Field Artillery Brigade
Chicago Ill.
Col. Donald J. Mellskog
(Vacant)

479th Field Artillery Brigade
Pittsburgh, Pa.
Col. Robert R. Armstrong
CSM Elmer J. Sveda

75th Maneuver Area Command
Houston, Tex.
MG Guilford J. Wilson Jr.
CSM Obie B. Johnson

87th Maneuver Area Command
Birmingham, Ala.
BG Alfred W. Porter Jr.
CSM Wilford M. Garrett

2nd Hospital Center
Hamilton Field, Calif.
BG James R. Sims Jr.
CSM Elvin L. Webber

8th Medical Brigade
Ft. Hamilton, N.Y.
Col. Thomas E. Potter
CSM William D. Keiswer

21st Support Command (CONUS Augmentation)
Ft. Benjamin Harrison, Ind.
BG Richard D. Chegar
MSG Joseph Crouch

30th Hospital Center
Ft. Sheridan, Ill.
Col. Paul W. Gerster
CSM Harry I. Strolk

103rd Corps Support Command
Des Moines, Iowa
MG Ralph W. Coan Jr.
CSM Terry Vrieze

143rd Transportation Brigade
Orlando, Fla.
BG James T. Craig
CSM Steven Sopko

220th Military Police Brigade
Gaithersburg, Md.
BG Raymond E. Bell Jr.
CSM John C. Stargel

221st Military Police Brigade
San Jose, Calif.
BG Douglas J. O'Connor
CSM Roger Jost

300th Military Police Command (POW)
Inkster, Mich.
BG William H. Reiff
CSM Paul R. Desander

310th Theater Army Area Command
Ft. Belvoir, Va.
MG James R. Montgomery
CSM Gary Woodruff

311th Corps Support Command
Los Angeles, Calif.
MG James E. Beal
CSM Jerome L. Haag

351st Civil Affairs Command
Mountain View, Calif.
BG Paul E. Vallely
CSM John A. Warmouth

352nd Civil Affairs Command
Riverdale, Md.
BG Dennis A. Wilkie
SGM Curtis D. Womack

353rd Civil Affairs Command
Bronx, N.Y.
Col. Michael A. Boyd
CSM Albert A. Meizl

358th Civil Affairs Brigade
Norristown, Pa.
Col. Gabriel J. Zinni
CSM Glenn P. Fulcher

361st Civil Affairs Brigade
Pensacola, Fla.
Col. James D. McCargo
CSM James D. Craft

377th Theater Army Area Command
New Orleans, La.
MG Anthony H. Conrad Jr.
CSM Carl C. Henderson

411th Engineer Brigade
Brooklyn, N.Y.
BG Roger L. Kresge
SGM Amos M. Gilliard

412th Engineer Command
Vicksburg, Miss.
MG Robert E. Louque Jr.
CSM Charles A. Rule

416th Engineer Command
Chicago, Ill.
MG Max Baratz
CSM David W. Moore

420th Engineer Brigade
Bryan, Tex.
BG Alvin W. Jones
SGM Jess F. Phillips

425th Transportation Brigade
Ft. Sheridan, Ill.
BG George M. Woywod
CSM Samuel M. Quiaoit

804th Hospital Center
Bedford, Mass.
BG George J. Busch
CSM Charles W. Elias

807th Medical Brigade
Seagoville, Tex.
BG Robert L. Wick Jr.
CSM Jimmie L. Carden

818th Hospital Center
Ft. Gillem, Ga.
Col. Stephen C. Boone
CSM Robert A. Babb

2290th Army Hospital
Rockville, Md.
Col. James W. Holsinger Jr.
CSM George B. Burck

2291st Army Hospital
Columbus, Ohio
Col. Howard A. Pope
SGM Edward J. Whitehead

5501st Army Hospital
Ft. Snelling, Minn.
Col. Raymond C. Bonnabeau Jr.
CSM Donald E. Kroneberg

7581st USAR Garrison
Ft. Buchanan, P.R.
BG Felix A. Santoni
(Vacant)



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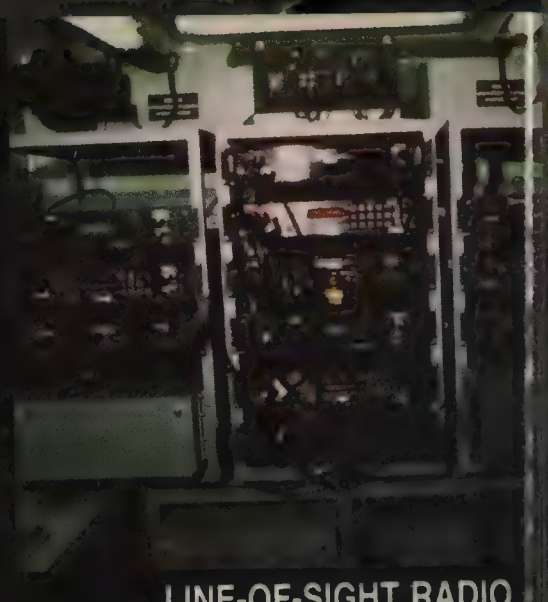

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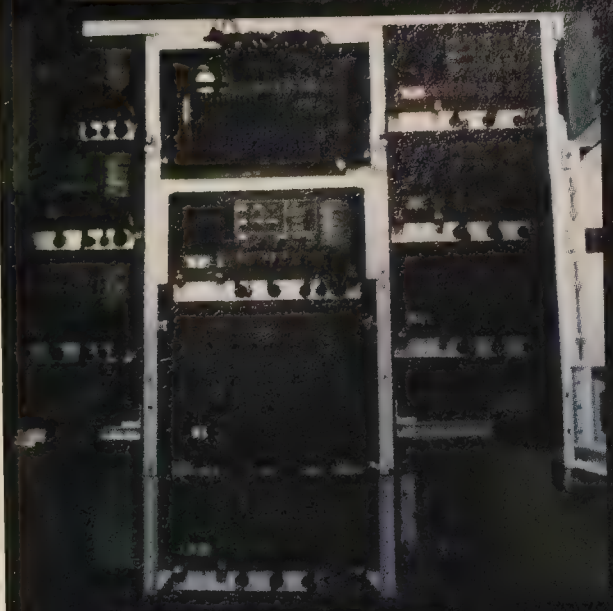
SWITCHING SHELTER FOR
NODAL CONTROL CENTER



OPERATIONS SHELTER FOR
NODAL CONTROL CENTER



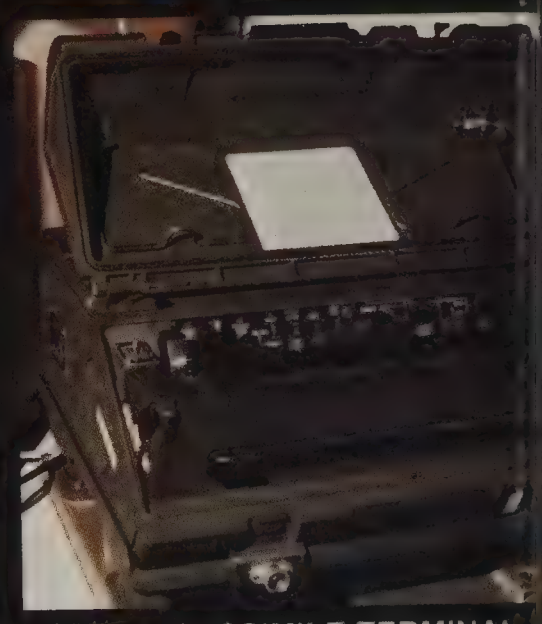
LINE-OF-SIGHT RADIO



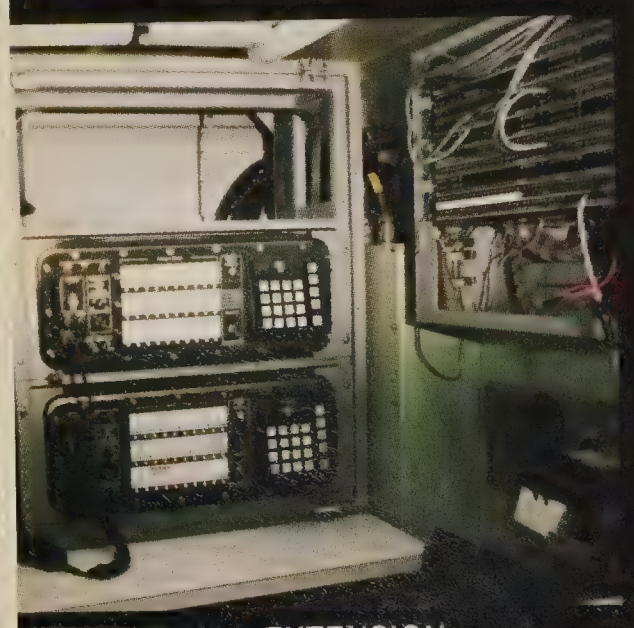
RADIO ACCESS UNIT



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RADIO TERMINAL



FACSIMILE TERMINAL



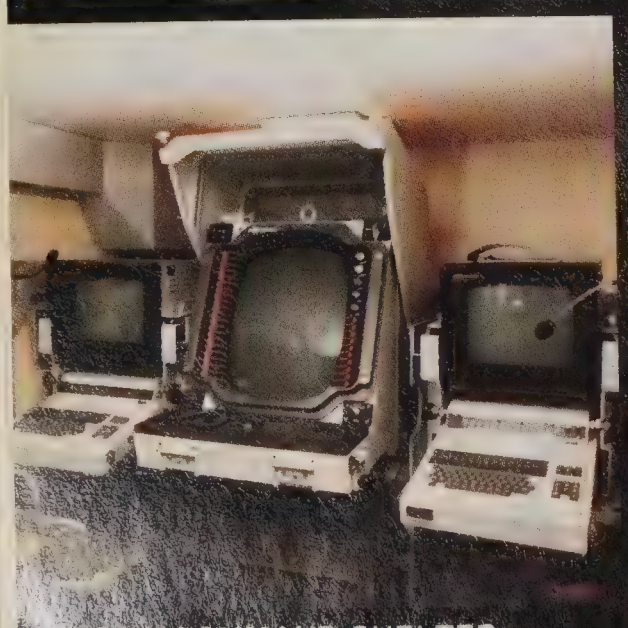
SMALL EXTENSION
NODE SWITCH



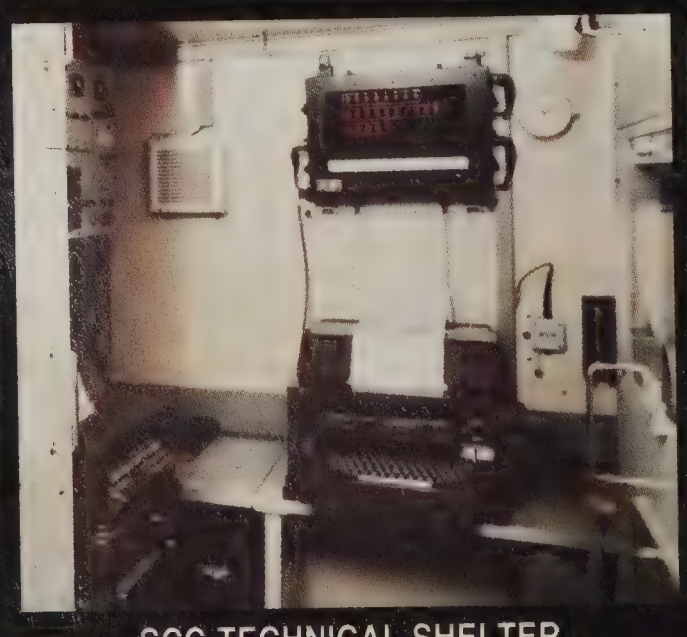
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LARGE EXTENSION
NODE SWITCH



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SCC PLANNING SHELTE



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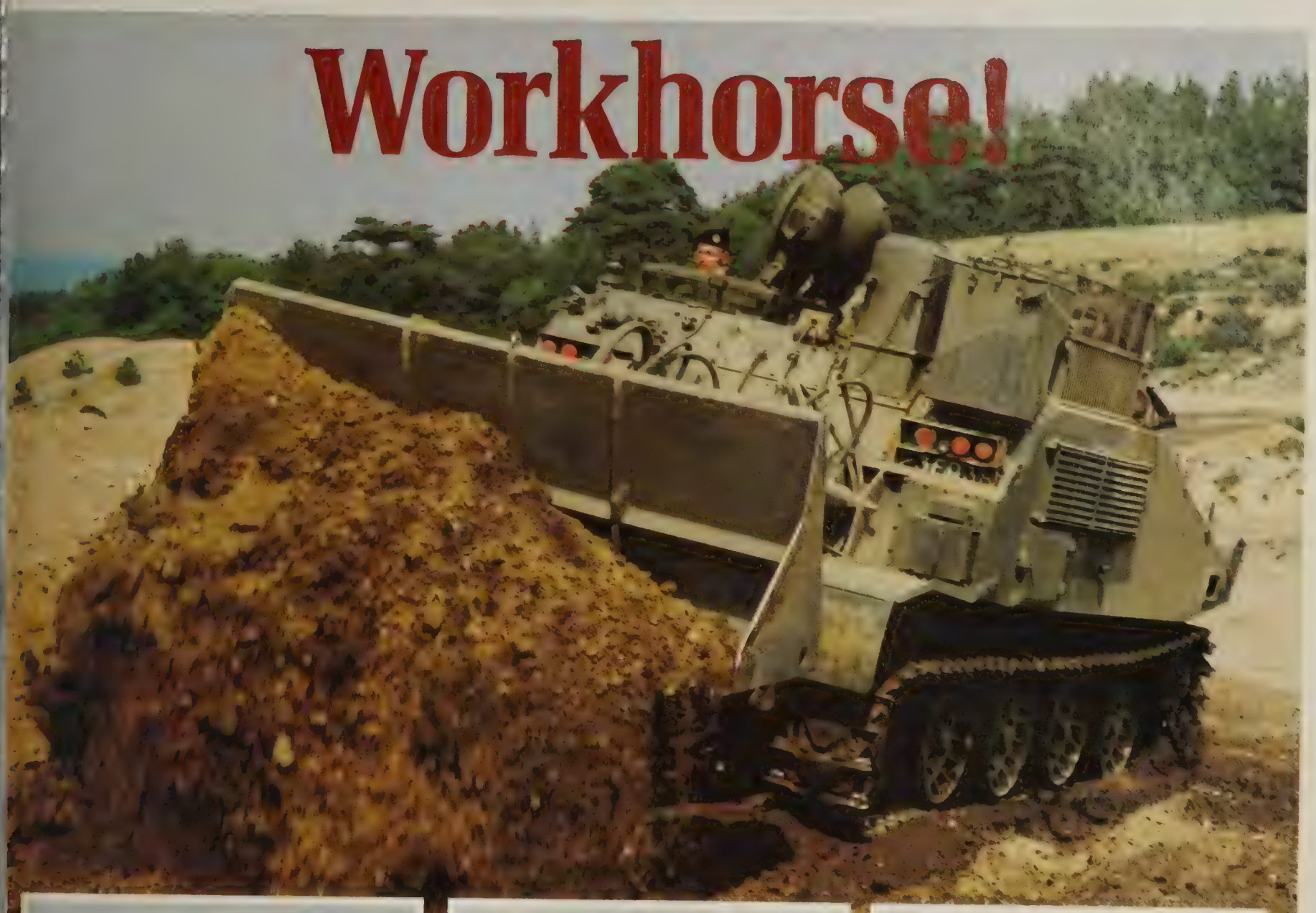
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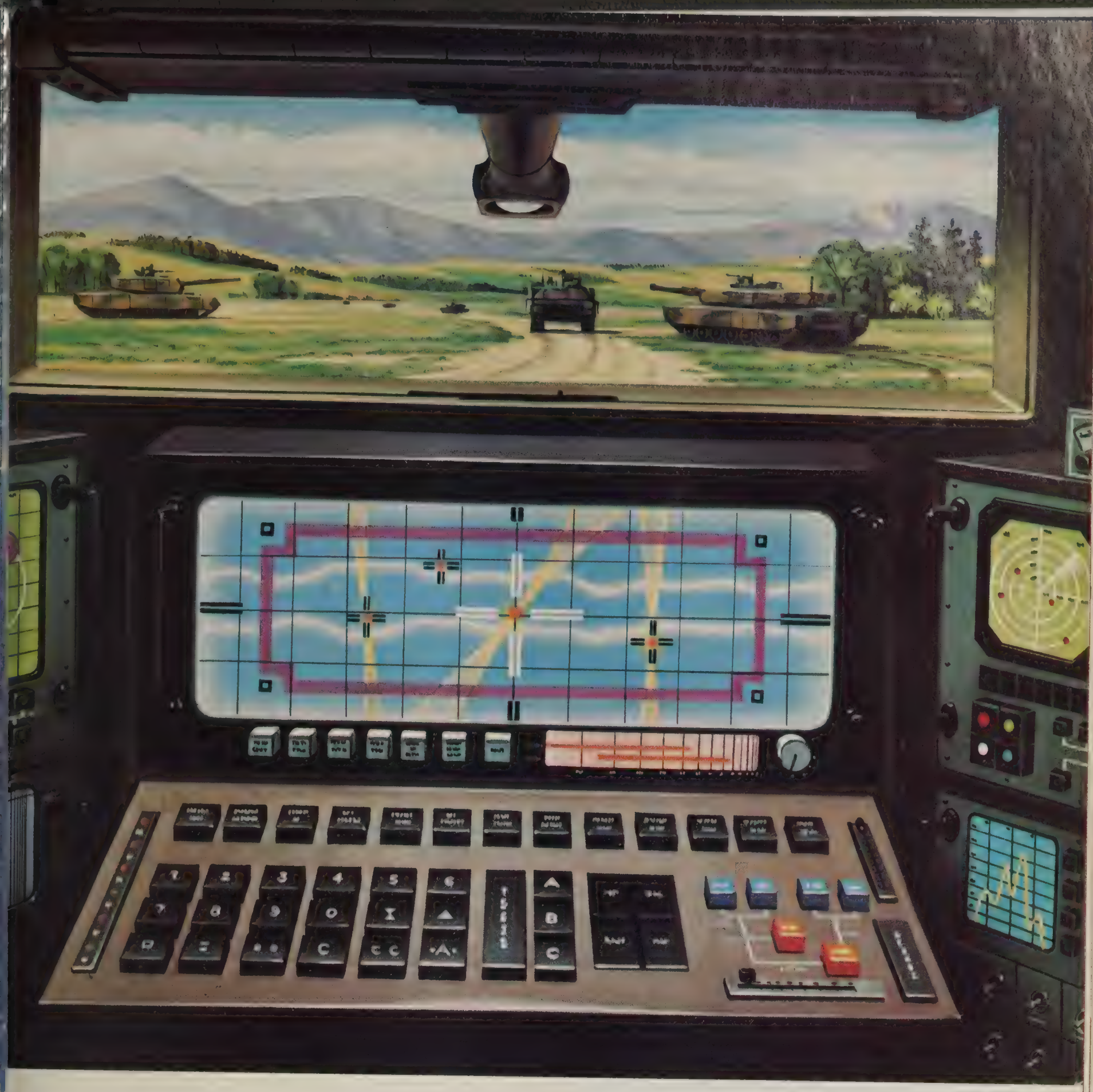
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MAJOR COMBAT UNI

Seattle, Wash. 81st Sep Inf Bde (Mech)

Fort Lewis, Wash.
I Corps
9th Inf Div (Mtzd)
1st SF Gp (Airborne)
35th AD Arty Bde

Portland, Ore. 41st Inf Bde

Bozeman, Mont. 163rd Armd Cav Regt

Twin Falls, Idaho 116th Armd Cav Regt

Pierre, S.D.
147th Fld Arty Bde

Cheyenne, Wyo. 115th Fld Arty Bde

Salt Lake City, Utah
19th SF Gp (Airborne)
I Corps Arty

Aurora, Colo. 169th Fld Arty Bde

Fort Ord, Calif.
7th Inf Div (Light)

Fort Riley, Kan. 1st In

Fort Carson, Colo. 4th Inf Div (Mech)

Enid, Okla.
45th Fld Arty Bde

Edmo
45th S

Long Beach, Calif.
40th Inf Div (Mech)

Albuquerque, N.M.
111th AD Arty Bde

Glendale, Ariz.
153rd Fld Arty Bde

III Corps Arty
75th Fld Arty Bde
212th Fld Arty Bde
214th Fld Arty Bde

Fort S

Fort Bliss, Tex.
11th AD Arty Bde
3rd Armd Cav Regt

III Corps
1st Cav Div
2nd Armd Div
6th Cav (Air Cmbt) Bde

Fort Hood, Tex

Austin, Tex.
49th Armd Div

N

THE U.S. ARMY



(Continued on next page)

MAJOR COMBAT UNITS, U.S. ARMY

Garlstedt 2nd Armd Div (Fwd)

West Berlin Berlin Bde

Giessen 42nd Fld Arty Bde

Fulda 11th Armd Cav Regt

Frankfurt-am-Main
- V Corps
- V Corps Arty
- 3rd Armd Div

Wertheim 72nd Fld Arty Bde

Bad Kreuznach
8th Inf Div (Mech)

Darmstadt
32nd AD Cmd

Babenhausen
41st Fld Arty Bde

Würzburg 3rd Inf Div (Mech)

Herzogenaurach 210th Fld Arty Bde

Nürnberg 2nd Armd Cav Regt

Ansbach 1st Armd Div

Stuttgart
VII Corps

Schwäbisch-Gmünd 56th Fld Arty Bde

Göppingen 1st Inf Div (Fwd)

Augsburg 17th Fld Arty Bde
VII Corps Artillery

PUERTO RICO AND
VIRGIN ISLANDS

San Juan, P.R. 92nd Separate Inf Bde

PANAMA

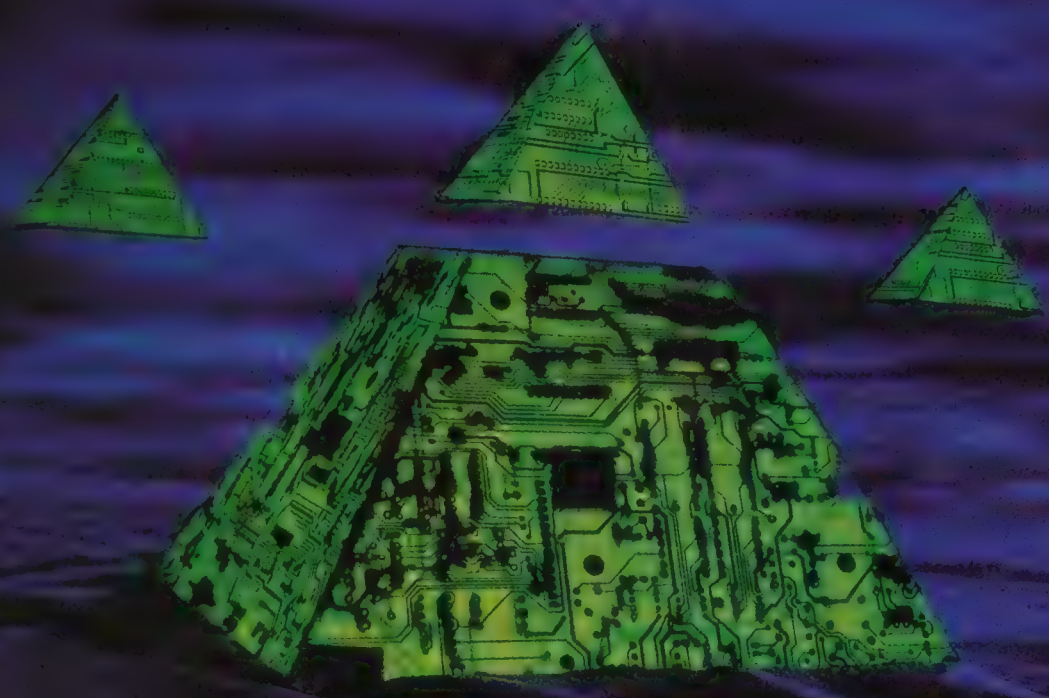
Fort Clayton
193 Inf Bde

KOREA

Camp Casey 2nd I

Seoul
Cmb Fld Army (ROK/US)

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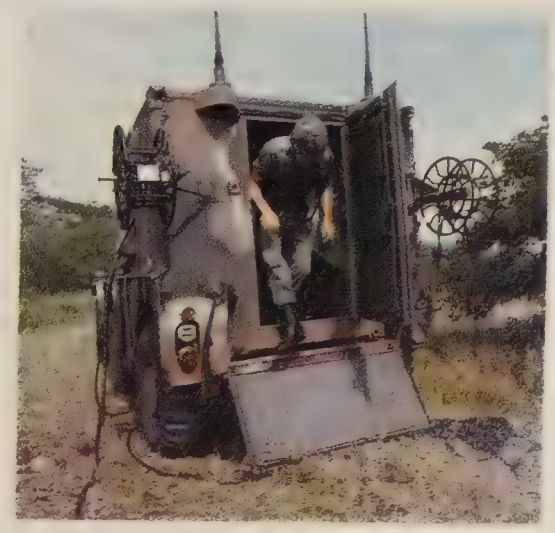
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LASR is based on the combat-proven AN/TPQ-36 Firefinder weapon-locating radar, built by Hughes for the U.S. Army. It has the same field-proven reliability and offers the same computer-controlled, electronically-scanned, pencil-beam antenna and state-of-the-art electronics. In addition, LASR's high commonality with the AN/TPQ-36 provides significant Life Cycle Costs Benefits in training, maintenance, spares support, and producibility.

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For more information about LASR and other surface radars, write Hughes Aircraft Company, Ground Systems Group, Surveillance and Sensor Systems Division, Fullerton, CA 92634. Or call (714) 732-4272.

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U.S. Army Posts And Installations



This section includes posts and installations primarily supporting the active Army in the continental United States, Hawaii, Alaska and Puerto Rico. Army ammunition plants and Army installations in caretaker or inactive status have been excluded. Strength figures include only active-duty military and Department of the Army civilians assigned and authorized as of 1 January, 1985. Acreages reflect real estate under Department of the Army control as of 1 July, 1985. The AUTOVON and commercial numbers listed are for operator assistance.

Aberdeen Proving Ground, Md. 21005. Opened 1918, home of HQ, Army Test and Evaluation Command, Chemical Research and Development Center, Army Ordnance Center and School, Army Environmental Hygiene Agency; 5,000 mil., 8,300 civ.; 79,000 acres, 35 miles northeast of Baltimore. AUTOVON: 283-1110; (301)278-5201.

Anniston Army Depot, Ala. 36201. Opened 1941, repairs and retrofits combat tracked vehicles, artillery and small arms; receives and stores general supplies, ammunition, missiles, small arms and strategic materials; 60 mil., 4,800 civ.; 15,000 acres adjacent to Ft. McClellan, 10 miles west of Anniston. AUTOVON: 694-1110; (205)235-7501.

Army Materials and Mechanics Research Center, Mass. 02172. Opened 1816 as Watertown Arsenal; manages Army's R&D structural materials and mechanics program; 20 mil., 666 civ.; 48 acres at Watertown, 6 miles west of Boston, on the north bank of the Charles River. AUTOVON: 955-5278; (617)923-5278.

Ft. A. P. Hill, Va. 22427. Opened 1942, named for Lt. Gen. Ambrose Powell Hill, CSA; subinstallation of Ft. Lee, used reserve components and active Ar training; 70 mil., 230 civ.; 76,000 ac at Bowling Green, 25 miles south Fredericksburg. AUTOVON: 934-81 (804)633-5041.

Arlington Hall Station, Va. 222 Opened 1942, named after school merly on the site; home of Army Int gence and Security Command; 530 r 21 civ.; 87 acres in Arlington, 2 m west of Ft. Myer. AUTOVON: 222-62 (202)692-6200.

Military Ocean Terminal, Bayon N.J. 07002. Established 1964, on tra fer of functions from Brooklyn; HQ, E ern Area, Military Traffic Managem Command; processes and prepares go for water transshipment; 150 r 1,800 civ.; 437 acres in New York H bor, 3 miles west of Brooklyn an miles from Statue of Liberty. AUTOV 247-5111; (201)823-5111.

Ft. Belvoir, Va. 22060. Opened 19 named after manor house of Col. Wil Fairfax built nearby, 1736–1741; h of the Army Engineer Center and Sch Army Belvoir Research and Deve ment Center, Army Nuclear and Ch ical Agency, Information Systems S ware Support Command, Defense M ping School, Defense Systems Man ment College, HQ, 310th Theater A Area Command (USAR); 4,950 mil., 6 civ.; 9,000 acres, 11 miles southwe



andria and 20 miles southwest of hington, D.C. AUTOVON: 354-6071;)664-6071.

Benjamin Harrison, Ind. 46216. Es- shed 1903, named after President amin Harrison; home of the Finance Accounting Center, Soldier Sup- Center, Enlisted Records and Eval- on Center, Defense Information ool, Soldier Support Institute, HQ, d Army Reserve Cmd.; 4,000 mil., 0 civ.; 2,460 acres, 13 miles north- of Indianapolis. AUTOVON: 699-); (317)546-9211.

Benning, Ga. 31905. Established , named after Brig. Gen. Henry L. ning, CSA; home of Army Infantry er and School, 197th Inf. Bde., HQ, Inf. Regt. (Rangers), 36th Engr. ; 26,000 mil., 5,300 civ.; 182,000 s, 9 miles south of Columbus. AU- ON: 784-0110; (404)544-2011.

Bliss, Tex. 79916. Opened 1854, ed for Bvt. Lt. Col. William Wallace h Bliss, Mexican War hero; home my Air Defense Artillery Center and ol, William Beaumont Army Medi- enter, 11th Air Def. Arty. Bde., 3rd red Cav. Regt., Army Sergeants r Academy; 20,500 mil., 8,000 civ.; 00 acres adjacent to El Paso. AU- ON: 978-0831; (915)568-2121.

Bragg, N.C. 28307. Opened 1918, ed for Gen. Braxton Bragg, CSA; e of XVIII Abn. Corps, 82nd Abn. Div., 1st Sp. Opns. Cmd., JFK Special Warfare Center, I Corps Support Command, 1st ROTC Region; 42,000 mil., 4,600 civ.; 130,700 acres, 9 miles northwest of Fayetteville. AUTOVON: 236-0311; (919)396-0011.

Cameron Station, Va. 22314. Opened 1942, named for Cameron, Va. (now part of Alexandria); site of HQ, Defense Logistics Agency, Joint Personal Property Shipping Office, Army Institute of Heraldry; provides commissary services for Washington-area military personnel; 400 mil., 3,800 civ.; 168 acres in Alexandria, 1 mile east of I–395. AUTOVON: 227-0101; (202)545-6700.

Ft. Campbell, Ky. 42223. Opened 1942, named for Brig. Gen. William B. Campbell, officer of Civil War Tennessee volunteers; home of 101st Abn. Div. (Air Assault); 21,000 mil., 2,700 civ.; 105,000 acres, 13 miles south of Hopkinsville, Ky., and 50 miles northwest of Nashville. AUTOVON: 635-2151; (502)798-2151.

Carlisle Barracks, Pa. 17013. Established 1757; site of Army War College, Military History Institute; 650 mil., 865 civ.; 440 acres, 18 miles southwest of Harrisburg. AUTOVON: 242-4141; (717) 245-3131.

Ft. Carson, Colo. 80913. Established 1942, named for Bvt. Brig. Gen. Christopher (''Kit'') Carson; home of 4th Inf. Div.; 19,500 mil., 3,500 civ.; 137,000 acres adjacent to Colorado Springs. AUTOVON: 691-5811; (303)579-5811.

Ft. Chaffee, Ark. 72905. Opened 1941, named after Maj. Gen. Adna R. Chaffee, first chief of the Armored Force, who died that year; supports active Army and reserve components training; 20 mil., 200 civ.; 72,000 acres, 8 miles southeast of Fort Smith, 150 miles northwest of Little Rock. AUTOVON: 962-2111; (501)484-2141.

Cold Regions Research Laboratory, N.H. 03755. Opened 1961; field operating agency of the Corps of Engineers, conducts cold weather research and testing; 15 mil., 300 civ.; 28 acres at Hanover. AUTOVON: 684-4100; (603) 646-4100.

Corpus Christi Army Depot, Tex. 78419. Opened 1961; performs overhaul, repair, modification, retrofit and modernization of rotary-wing aircraft; 44 mil., 4,250 civ.; 140 acres (leased from Corpus Christi Naval Air Station), 12 miles southeast of Corpus Christi. AUTOVON: 861-3626; (512)939-3626.

Ft. Detrick, Md. 21701. Established 1943, named after Maj. Frederick Louis Detrick; HQ, Medical Research and Development Command; 950 mil., 2,400 civ.; 1,200 acres at Frederick. AUTOVON: 343-1110; (301)663-8000.

Detroit Arsenal, Mich. 48090. Established 1940; HQ, Tank–Automotive Command; 380 mil., 6,200 civ.; 330 acres at Warren, Mich., 3 miles north of Detroit.

AUTOVON: 786-5101; (313)574-5000.

Ft. Devens, Mass. 01433. Established 1917, named for Bvt. Maj. Gen. Charles Devens, Civil War volunteer officer; Army Intelligence School, 10th Sp. Forces Grp. (Abn), HQ, 187th Inf. Bde. (USAR); 5,300 mil., 2,361 civ.; 11,629 acres at Ayer, 25 miles northwest of Boston. AUTOVON: 256-3711; (617)796-3711.

Ft. Dix, N.J. 08640. Opened 1917, named for Maj. Gen. John Adams Dix, statesman and Civil War Union officer; Army Training Center; 13,000 mil., 2,300 civ.; 31,000 acres at Wrightstown, 17 miles southeast of Trenton, 30 miles east of Philadelphia. AUTOVON: 944-1110; (609)562-1011.

Ft. Douglas, Utah 84113. Established 1862, named after Sen. Stephen A. Douglas; subinstallation of Ft. Carson, HQ for an Army readiness group and 96th Army Reserve Cmd.; 35 mil., 500 civ.; 119 acres at Salt Lake City. AUTOVON: 924-4097; (801)524-4097.

Ft. Drum, N.Y. 13602. Established 1908, renamed for Lt. Gen. Hugh A. Drum, commander, First U.S. Army, 1938–43; HQ, 10th Mtn. Div. (Lt Inf); 2,000 mil., 1,200 civ.; 107,265 acres, 11 miles northeast of Watertown, 78 miles north of Syracuse. AUTOVON: 341-5565; (315) 785-6900.

Dugway Proving Ground, Utah 84022. Established 1942; performs test and evaluation of chemical and biological material, incendiary devices and smoke systems; 219 mil., 837 civ.; 802,000 acres, 80 miles southwest of Salt Lake City. AUTOVON: 789-2116; (801)831-2116.

Ft. Eustis, Va. 23604. Established 1918, named for Bvt. Brig. Gen. Abram Eustis, Virginia native and veteran of War of 1812; Army Transportation Center and School, Training Support Center, Applied Technology Laboratory, Aviation Logistics School, 7th Trans. Grp.; 7,900 mil., 2,800 civ.; 8,200 acres adjacent to Newport News, 11 miles southeast of Williamsburg. AUTOVON: 927-1110; (804)878-5251.

Fitzsimons Army Medical Center, Colo. 80045. Established 1918, named for 1st Lt. William T. Fitzsimons, first American medical officer killed in World War I; site of Fitzsimons Army Medical Center, Army Medical Equipment and Optical School, HQ for an Army readiness group, World HQ, CHAMPUS; 2,800 mil., 2,000 civ.; 525 acres at Aurora, 1 mile east of Denver. AUTOVON: 943-1101; (303) 361-8241.

Ft. Gillem, Ga. 30050. Opened 1941, named for Lt. Gen. Alvan C. Gillem Jr., Third U.S. Army commander, 1947–50; subinstallation of Ft. McPherson, site of HQ, Second U.S. Army, Forces Command headquarters activities, 2nd Recruiting Bde., HQ, 818th Hosp. Center (USAR); 480 mil., 850 civ.; 1,500 acres at Forest Park, southeast of Atlanta. AUTOVON: 797-1001; (404)363-5000.

Ft. Gordon, Ga. 30905. Opened 1941, named for Lt. Gen. John Brown Gordon, CSA; home of the Army Signal Center, Dwight David Eisenhower Army Medical Center; 6,800 mil., 3,400 civ.; 56,000 acres, 12 miles southwest of Augusta. AUTOVON: 780-1110; (404)791-0110.

Ft. Greely, Alaska 98733. Established 1942, named for Maj. Gen. Adolphus Washington Greely, Arctic explorer; site of Northern Warfare Training Center, Army Cold Regions Test Center; 730 mil., 230 civ.; 677,000 acres, 102 miles southeast of Fairbanks. AUTOVON: 317-872-1113; (907)872-1113.

Ft. Hamilton, N.Y. 11252. Established 1825, named after Alexander Hamilton; HQ, New York City Command, provides administrative and logistical support for Army agencies in the New York Metropolitan Area, HQ, 8th Medical Bde. (USAR); 560 mil., 340 civ.; 170 acres in Brooklyn. AUTOVON: 232-1110; (718) 630-4101.

Harry Diamond Laboratories, Md. 20783. Established 1953, named for Harry Diamond, government scientist and aviation radio pioneer; HQ, Laboratory Command; 3 mil., 700 civ.; 2,300 acres (includes site at Woodbridge, Va.) at Adelphi, Md., near Washington, D.C. AUTOVON: 290-3590; (202)394-3590.

Ft. Hood, Tex. 76544. Opened 1942, named for Gen. John Bell Hood, CSA; home of HQ, III Corps, 2nd Armd. Div., 1st Cav. Div., 6th Cav. (Air Combat) Bde., 3rd Sig. Bde., Combined Arms Test Activity; 38,000 mil., 5,600 civ.; 217,000 acres adjacent to Killeen, 60 miles southwest of Waco, 150 miles south of Dallas. AUTOVON: 737-2131; (817)287-2131.

Ft. Huachuca, Ariz. 85613. Opened 1877, named after Huachuca ("place of thunder") Mountains; HQ, Army Information Systems Command, Intelligence Center and School, Army Electronics Proving Ground, Electronic Systems Engineering Installation Agency, 11th Sig. Bde.; 5,000 mil., 3,900 civ.; 73,000 acres, 60 miles southeast of Tucson. AUTOVON: 879-0001; (602)538-2151.

Ft. Hunter Liggett, Calif. 93928. Established 1941, named for Lt. Gen. Hunter Liggett, World War I corps and army commander, who lived in the area in retirement; subinstallation of Ft. Ord, home of Combat Developments Experimentation Center; 120 mil., 140 civ.; 165,000 acres at Jolon, 20 miles south of King City. AUTOVON: 949-2291; (408) 385-5911.

Ft. Indiantown Gap, Pa. 17003. Opened 1940, named after Indian communities formerly located at the gap in nearby Blue Mountain; subinstallation of Ft. Meade, Md.; supports active Army and reserve components training; 125 mil. 1,400 civ.; 18,000 acres, 10 miles north west of Lebanon. AUTOVON: 235-1110 (717)273-2601.

Ft. Irwin, Calif. 92310. Established 1940 named for Lt. Gen. George LeRoy Irwin noted World War I artillery commander site of National Training Center; 3,500 mil., 2,100 civ.; 638,300 acres, 37 miles northeast of Barstow. AUTOVON: 470 0111; (619)386-1111.

Ft. Jackson, S.C. 29207. Established 1917, named for President Andrew Jackson; conducts basic combat training HQ, 120th Army Reserve Cmd.; 18,000 mil., 3,500 civ.; 52,000 acres adjacent to Columbia. AUTOVON: 734-1110 (803)751-7511.

Jefferson Proving Ground, Ind. 47250 Established 1941, named for President Thomas Jefferson; performs testing o ammunition and components; 3 mil., 40 civ.; 55,000 acres, 6 miles north o Madison, 50 miles northeast of Louisville, Ky. AUTOVON: 480-1110; (812 273-7211.

Ft. Knox, Ky. 40121. Opened 1918 named for Maj. Gen. Henry Knox, Revolutionary War hero and first secretar of war; home of the Army Armor Cente and School, 194th Armd. Bde., HQ an Army readiness group, Second ROT Region; 19,000 mil., 4,200 civ.; 110,00 acres, 31 miles south of Louisville. AU TOVON: 464-0111; (502)624-1181.

Ft. Leavenworth, Kan. 66027. Established 1827, named for Bvt. Brig. Ge Henry Leavenworth, commander of th 3rd Inf. when it built the post; home the Command and General Staff Co lege, Combined Arms Center, HQ, 35 Inf. Div. (Mech) of the Army Nation Guard, Army Disciplinary Barracks; 4,7 mil., 1,800 civ.; 5,600 acres adjacent Leavenworth, 35 miles northwest of Ka sas City. AUTOVON: 552-5604; (91 684-5604.

Ft. Lee, Va. 23801. Opened 1941, nam for Gen. Robert E. Lee, CSA; home Army Quartermaster Center and Scho Army Logistics Center, Troop Supp Agency; 3,700 mil., 3,800 civ.; 5,6 acres, 3 miles east of Petersburg. A TOVON: 687-0111; (804)734-1011.

Ft. Leonard Wood, Mo. 65473. Open 1941, named for Maj. Gen. Leona Wood, Army chief of staff, 1910– home of the Engineer Training Cent 15,000 mil., 2,200 civ.; 63,000 acr 30 miles southwest of Rolla, 135 mi southwest of St. Louis. AUTOVON: 5 0110; (314)368-0131.

Letterkenny Army Depot, Pa. 172 Opened 1942, named after Letterker Township, which the depot absorb performs storage, issue, rebuilding, te ing, overhauling and demilitarization general supplies; 140 mil., 5,400 c



Root Hall, site of the Army War College, Carlisle Barracks, Pa.

00 acres, 5 miles north of Cham-burg, 50 miles south of Harrisburg. OVON: 238-1110; (717)263-6111.

Lewis, Wash. 98433. Established , named for Capt. Meriwether Lewis, ewis and Clark Expedition; home of rps, 9th Inf. Div. (Mtzd), Develop- t and Employment Agency, 1st Sp. es Grp. (Abn), Fourth ROTC Region, gan Army Medical Center; 25,200 5,700 civ.; 86,000 acres, 15 miles neast of Tacoma. AUTOVON: 357- ; (206)967-5151.

ngton–Bluegrass Activity, Ky. 1. Opened 1942; performs general ly and maintenance functions on nunications security and electronics ment and ammunition storage; 150 2,000 civ.; total 15,280 acres (780 xington, 14,500 at Richmond), with quarters 13 miles east of Lexing- AUTOVON: 745-1110; (606)293-3087 ngton), (606)623-7600 (Richmond).

lcClellan, Ala. 36112. Established , named for Maj. Gen. George B. ellan, commander in chief of the and the Army of the Potomac, -62; home of Chemical School, ry Police School, basic combat ng brigade; 9,800 mil., 1,600 civ.; 0 acres, 5 miles north of Anniston. OVON: 865-1110; (205)238-4611.

lcCoy, Wisc. 54656. Established named for Maj. Gen. Bruce McCoy, Army National Guard; supports Army and reserve components g; 160 mil., 900 civ.; 59,000 acres arta, 35 miles east of LaCrosse. OVON: 280-1110; (608)388-2222.

lcNair, Washington, D.C. 20319. lished 1791, named for Gen. Lesley cNair, Army Ground Forces com-mander killed at Normandy, 1944; home of the National War College, HQ, Military District of Washington; 570 mil., 490 civ.; 89 acres in southwest Washington, D.C. AUTOVON: 335-0866; (202) 475-0866.

Ft. McPherson, Ga. 30330. Established 1885, named for Maj. Gen. James Birdseye McPherson, Civil War commander of the Army of Tennessee, killed during the siege of Atlanta, July 1864; site of HQ, Army Forces Command, Third U.S. Army; 3,033 mil., 8,036 civ.; 483 acres, 4 miles west of Atlanta. AUTOVON: 588-1110; (404)752-3113.

Ft. Meade, Md. 20755. Established 1917, named for Maj. Gen. George Gordon Meade, commander of the Army of the Potomac, 1863–65; HQ, First U.S. Army, National Security Agency, HQ, 97th Army Reserve Cmd.; 7,500 mil., 16,400 civ.; 13,500 acres, 15 miles northwest of Washington, D.C. AUTOVON: 923-1110; (301)677-6261.

Ft. Monmouth, N.J. 07703. Established 1917, named for Revolutionary War battle (1778); HQ, Army Communications–Electronics Command, Information Systems Management Activity, Chaplain Center and School; 2,500 mil., 8,900 civ.; 630 acres, 50 miles south of New York City. AUTOVON: 992-1110; (201) 532-9000.

Ft. Monroe, Va. 23651. Established 1823, named for President James Monroe; HQ, Army Training and Doctrine Command; 1,200 mil., 1,800 civ.; 1,000 acres adjacent to Hampton. AUTOVON: 680-1110; (804)727-2111.

Ft. Myer, Va. 22211. Established 1862, named for Brig. Gen. Albert J. Myer, first chief of the Army Signal Corps; home of 1st Bn., 3rd Inf. (The Old Guard), the U.S. Army Band; 1,800 mil., 1,100 civ.; 250 acres adjacent to Arlington National Cemetery across the Potomac River from Washington, D.C. AUTOVON: 335-0866; (202)475-0866.

Natick Development Center, Mass. 01760. Established 1953; responsible for research and development of aero mechanical engineering, clothing, body armor, food and personal equipment; 120 mil., 1,100 civ.; 78 acres at Natick, 20 miles west of Boston. AUTOVON: 256-4300; (617)651-4000.

New Cumberland Army Depot, Pa. 17070. Established 1918; performs general supply mission, including maintenance of construction equipment and components and overhaul of aircraft and aircraft components; 475 mil., 4,100 civ.; 833 acres, 5 miles south of Harrisburg. AUTOVON: 977-1110; (717)782-6011.

Oakland Army Base, Calif. 94626. Established 1941; HQ, Western Area, Military Traffic Management Command; handles cargo for shipment; 95 mil., 556 civ.; 560 acres at Oakland. AUTOVON: 859-9111; (415)466-9111.

Ft. Ord, Calif. 93941. Established 1917, named for Maj. Gen. Edward O.C. Ord, Civil War corps and army commander, who commanded the Monterey garrison after the Mexican War; home of 7th Inf. Div. (Lt); 20,000 mil., 3,500 civ.; 28,000 acres, 3 miles north of Monterey. AUTOVON: 929-1110; (408)242-2211.

Picatinny Arsenal, N.J. 07801. Established 1879, name is Lenape Indian word meaning "water by the hill"; Army Armament Research and Development Center; 200 mil., 5,700 civ.; 6,400 acres at Dover, 40 miles west of New York City. AUTOVON: 880-6365; (201)724-6365.

Ft. Pickett, Va. 23824. Established 1942, named for Maj. Gen. George Edward Pickett, CSA; subinstallation of Ft. Lee supporting active Army and reserve components training; 50 mil., 400 civ.; 46,000 acres, 40 miles west of Petersburg. AUTOVON: 687-0111; (804)292-8621.

Pine Bluff Arsenal, Ark. 71602. Established 1941; produces chemical munitions; 100 mil., 1,300 civ.; 14,000 acres, 9 miles northwest of Pine Bluff. AUTOVON: 966-3798; (501)541-3000.

Ft. Polk, La. 71459. Established 1941, named for Lt. Gen. Leonidas Polk, CSA, killed in action at Kennesaw Mountain, Ga., June 1864; home of 5th Inf. Div. (Mech); 14,000 mil., 2,500 civ.; 198,000 acres, 9 miles south of Leesville. AUTOVON: 863-1110; (318)535-2911.

Presidio of Monterey, Calif. 93944. Established 1847; subinstallation of Ft. Ord, site of the Defense Language Institute; 2,800 mil., 1,000 civ.; 390 acres in Monterey, 125 miles south of San Francisco. AUTOVON: 929-1110; (408) 242-2211.

Presidio of San Francisco, Calif. 94129. Established 1846; HQ, Sixth U.S. Army, Letterman Army Medical Center, Letterman Army Institute of Research; 2,900 mil., 3,000 civ.; 1,400 acres in San Francisco, at foot of Golden Gate Bridge. AUTOVON: 586-1110; (415)561-2211.

Pueblo Depot Activity, Colo. 81001. Established 1941; subinstallation of Tooele Army Depot, stores and ships general supplies, maintains missile systems and bridging equipment, and demilitarizes ammunition; 4 mil., 745 civ.; 22,000 acres at Pueblo. AUTOVON: 877-4101; (303)549-4111.

Red River Army Depot, Tex. 75507. Established 1941; stores and maintains general supplies and ammunition, maintains and overhauls combat vehicles; 65 mil., 6,000 civ.; 19,000 acres 18 miles west of Texarkana, 80 miles northwest of Shreveport, La. AUTOVON: 829-4110; (214)838-2141.

Redstone Arsenal, Ala. 35898. Established 1941, named after the red soil of the region; HQ, Army Missile Command, Ballistic Missile Defense Systems Command (in Huntsville), Ordnance, Missile and Munitions Center and School; 3,700 mil., 10,500 civ.; 36,750 acres adjacent to the southwest limits of Huntsville. AUTOVON: 746-2151; (205)876-2151.

Ft. Richardson, Alaska 99505. Established 1940, named after Brig. Gen. Wilds P. Richardson, pioneer Alaskan explorer; home of 172nd Inf. Bde. (Alaska); 4,400 mil., 1,300 civ.; 63,000 acres adjacent to Anchorage. AUTOVON: 317-864-0113; (907)864-0113.

Ft. Riley, Kan. 66442. Established 1853, named for Bvt. Maj. Gen. Bennet Riley, Mexican War hero, who died that year; home of 1st Inf. Div. (Mech), HQ, Third ROTC Region; 16,000 mil., 5,200 civ.; 100,000 acres just north of Junction City, 100 miles west of Kansas City. AUTOVON: 856-1110; (913)239-3911.

Ft. Ritchie, Md. 21719. Established 1926, named for Gov. Albert C. Ritchie of Maryland; HQ, 7th Signal Cmd. (CONUS); 1,200 mil., 1,000 civ.; 638 acres at Cascade, 30 miles north of Frederick. AUTOVON: 277-1300; (301)878-1300.

Rock Island Arsenal, Ill. 61299. Established 1862; HQ, Army Armament, Munitions and Chemical Command; 370 mil., 10,000 civ.; on 946-acre island in the Mississippi River, between Moline, Ill., and Davenport, Iowa. AUTOVON: 793-1110; (309)782-6001.

Rocky Mountain Arsenal, Colo. 80022. Established 1942; responsible for the control and disposal of chemical munitions and materials; 4 mil., 225 civ.; 17,000 acres at Commerce City, 1 mile northeast of Denver. AUTOVON: 556-2710; (303)288-0711.

Ft. Rucker, Ala. 36362. Established 1942, named for Col. Edmund W. Rucker, CSA, Confederate cavalry leader; houses Aviation Center, Aviation Safety Center, Aviation Development Test Activity, Army Aeromedical Center; 7,833 mil., 3,327 civ.; 64,222 acres, 10 miles west of Enterprise. AUTOVON: 558-3100; (205)255-6181.

Sacramento Army Depot, Calif. 95813. Established 1941; stores, receives, maintains and issues communications–electronics supplies; 250 mil., 3,200 civ.; 485 acres 7 miles east of Sacramento. AUTOVON: 839-1110; (916)388-2211.

St. Louis Area Support Center, Ill. 62040. Established 1971 on inactivation of Granite City Army Depot; performs administrative and logistical services for Army Aviation Systems Command and Troop Support Command, both in St. Louis; 40 mil., 40 civ.; 895 acres at Granite City, Ill., across the Mississippi River from St. Louis, Mo. AUTOVON: 892-1110; (618)452-4211.

Ft. Sam Houston, Tex. 78234. Established 1876, named after the first president of the Republic of Texas; HQ, Fifth U.S. Army, Health Services Command, Academy of Health Sciences, Brooke Army Medical Center, HQ, 90th Army Reserve Cmd.; 9,900 mil., 5,900 civ.; 3,100 acres at San Antonio, 28,000 acres at subinstallation Camp Bullis, 24 miles northwest. AUTOVON: 471-1110; (512)221-1211.

Savanna Army Depot Activity, Ill. 61074. Established 1917; stores munitions; 4 mil., 500 civ.; 13,000 acres at Savanna, 150 miles west of Chicago. AUTOVON: 585-1110; (815)273-8000.

Schofield Barracks, Hawaii 96857. Established 1908, named for Lt. Gen. John McAllister Schofield, commander in chief of the Army, 1888–95, whose recommendations led to first U.S. military presence in the islands; home of 25th Inf. Div., 45th Spt. Grp.; 11,000 mil., 900 civ.; 14,000 acres, 17 miles northwest of Honolulu. AUTOVON: 455-0819; (808) 655-0363.

Seneca Army Depot, N.Y. 14541. Established 1941, named for nearby Seneca Lake; receives, stores, issues and maintains munitions and industrial plant equipment; 580 mil., 970 civ.; 11,000 acres at Romulus, 50 miles southwest of Syracuse. AUTOVON: 455-0819; (607) 869-1110.

Ft. Shafter, Hawaii 96858. Established 1907, named for Maj. Gen. William R. Shafter, Civil War hero and Spanish–American War corps commander; HQ, Army Western Command, Army Support Command Hawaii; 1,200 mil., 2,000 civ.; 1,300 acres near Honolulu. AUTOVON: 438-9375; (808)471-7411.

Sharpe Army Depot, Calif. 95331. Established 1942, named for Maj. Gen. Henry G. Sharpe, quartermaster general, 1916–18; supports western United States, Alaska and the Pacific through the testing, repair and shipment of military materiel; 40 mil., 1,400 civ.; 72 acres at Lathrop, 60 miles east of Oakland. AUTOVON: 462-2011; (209)982-2011.

Ft. Sheridan, Ill. 60037. Established 1887, named for Gen. Philip H. Sheridan, Civil War Union cavalry leader and commander in chief of the Army, 1883–88; HQ, Fourth U.S. Army, Army Recruiting Command, U.S. Military Enlistment Processing Command, 425th Trans Bde. (USAR); 2,200 mil., 2,400 civ.; 69 acres, 28 miles north of Chicago. AUTOVON: 459-1101; (312)926-4111.

Sierra Army Depot, Calif. 96113. Established 1941; stores munitions, missiles, war reserves; 400 mil., 600 civ.; 36,000 acres at Herlong, 60 miles northwest of Reno, Nev. AUTOVON: 830-9910; (916)827-2111.

Ft. Sill, Okla. 73503. Established 186 named for Brig. Gen. Joshua W. Sill, Union commander killed at the battle of Stones River, Tenn., Dec. 1862; home of Field Artillery Center and School, HQ III Corps Artillery; 23,800 mil., 3,80 civ.; 94,219 acres, 3 miles north of Lawton. AUTOVON: 639-7090; (405)35 8111.

Ft. Stewart, Ga. 31314. Established 1940, named for Brig. Gen. Daniel Stewart, Georgia militia officer in the War of 1812; home of 24th Inf. Div. (Mech) 15,000 mil., 2,600 civ.; 279,000 acres Hinesville, 40 miles southwest of Savannah. AUTOVON: 870-1110; (91 767-1110.

Ft. Story, Va. 23459. Established 19 named for Maj. Gen. John Patton Sto former chief of the Artillery School; su installation of Ft. Eustis, Va.; amphi ous training site for the active Army a reserve components; 1,572 mil., 2 civ.; 1,451 acres, 3 miles north of V ginia Beach. AUTOVON: 927-9210; (8 422-7210.

Sunny Point Military Ocean Termir N.C. 28461. Established 1955; loa and ships ammunition, explosives a other cargo; 15 mil., 260 civ.; 16,0 acres at Southport. AUTOVON: 4 8000; (919)341-8000.

Tobyhanna Army Depot, Pa. 184 Established 1953; stores general s plies, repairs and modifies communi tions–electronics equipment; 57 n 4,600 civ.; 1,200 acres at Tobyhan 20 miles southeast of Scranton. AU VON: 795-7110; (717)894-7000.

Tooele Army Depot, Utah 84074.



Ft. Ritchie, Md., post headquarters.

shed 1943; performs overhaul of cal wheeled vehicles; 80 mil., 4,000 44,096 acres near Tooele (pro- ced "too-ella"), 35 miles south- of Salt Lake City. AUTOVON: 790- ; (801)833-3211.

er Army Medical Center, Hawaii 9. Established 1920, named for Bvt. Gen. Charles Stuart Tripler, medi- irector of the Army of the Potomac g the Civil War; performs in- and atient medical services; 1,687 mil., 4 civ.; 360 acres, 5 miles northwest nolulu. AUTOVON: 315-6661; (808) 6661.

tilla Depot Activity, Ore. 97838. olished 1940, named for the Indian subinstallation of Tooele Army De- performs care, preservation, ship- and maintenance of ammunition other assigned commodities; 8 mil., iv.; 19,864 acres, 11 miles west of iston. AUTOVON: 790-5010; (503) 421.

Hill Farms Station, Va. 22186. olished 1942, named after Vint Hill es; home of Signal Warfare Labor- Electronic Materiel Research Ac- 636 mil., 834 civ.; 700 acres near nton, 45 miles southwest of Wash- n, D.C. AUTOVON: 249-0111; (703) 000.

Vainwright, Alaska 99703. Estab- l 1960, named after Gen. Jonathan Vainwright, hero of Bataan; home n Bn., 327th Inf., 222nd Avn. Bn.; mil., 973 civ.; 917,000 acres ad- t to Fairbanks. AUTOVON: 317- 070; (907)353-7513.

r Reed Army Medical Center, ington, D.C. 20307. Established named for Maj. Walter Reed, con- r of yellow fever; site of Walter Hospital, Walter Reed Army Insti- f Research, Armed Forces Insti- f Pathology, Army Dental Activity; 4,000 mil., 4,000 civ.; 215 acres (including Forest Glen and Glenhaven housing area) in the District of Columbia. AUTOVON: 291-3501; (202)576-3501.

Watervliet Arsenal, N.Y. 12189. Established 1813, named from the Dutch for "rolling waters"; conducts research, development and production of artillery weapons; 14 mil., 2,500 civ.; 140 acres at Watervliet, 6 miles south of Albany. AUTOVON: 974-1110; (518)266-5111.

West Point, N.Y. 10996. Established 1802; home of the United States Military Academy; 6,500 mil., 2,700 civ.; 16,000 acres on west bank of Hudson River, 50 miles north of New York City. AUTOVON: 688-1110; (914)938-4011.

White Sands Missile Range, N.M. 88002. Established 1945; birthplace of U.S. missile and space activity and Army's main missile test site; 1,400 mil., 4,000 civ.; 1.7 million acres with main facilities 27 miles east of Las Cruces, 40 miles west of El Paso, Tex. AUTOVON: 258-2121; (505)678-2121.

Ft. Wingate Depot Activity, N.M. 87316. Established 1870, named after Bvt. Maj. Benjamin Wingate, who died of wounds received at the Battle of Valverde, N.M., 1862; subinstallation of Tooele Army Depot; stores, ships, renovates ammunition; 2 mil., 180 civ.; 22,000 acres, 10 miles east of Gallup. AUTOVON: 790-6000; (505)488-5411.

Yakima Firing Center, Wash. 98901. Established 1941; subinstallation of Ft. Lewis providing ranges and maneuver areas for the 9th Inf. Div. (Mtzd.); 78 mil., 98 civ.; 263,000 acres, 6 miles northeast of Yakima, 146 miles southeast of Tacoma. AUTOVON: 355-8203; (509)454-8203.

Yuma Proving Ground, Ariz. 85365. Established 1943; performs desert testing for all types of materiel, home of Atmospherics Science Laboratory; 350 mil., 950 civ.; 1 million acres with main facilities 31 miles northeast of Yuma. AUTOVON: 899-2020; (602)328-2020.

Major Reserve Components Training Sites

The following listing includes only those non-active Army installations which can accommodate brigade-sized or larger units for maneuver training. They operate under a variety of arrangements—most are federally owned and operated by the state concerned, but some are entirely state owned, and others involve leases from other federal and state agencies.

It should be noted that this listing does not include active posts maintained by the Army primarily for reserve components training; these will be found in the directory of active Army installations. It should also be remembered that reserve components units conduct much of their annual training on federal posts that are continually occupied by active Army units. Commercial telephone numbers are for operator assistance at the sites listed; AUTOVON numbers are for military points of contact.

Atterbury Training Area, Edinburgh, Ind. 46124. AUTOVON: 699-2210; (812) 526-9711.

Camp Blanding, Starke, Fla. 32091. AUTOVON: 960-3100; (904)533-3100.

Camp Edwards, Mass. Mil. Res., Mass. 02542. AUTOVON: 557-5885; (617)563-9037.

Gowen Field, Boise, Idaho 83707. AUTOVON: 941-5123; (208)385-5123.

Camp Grayling, Grayling, Mich. 49738. AUTOVON: 722-8200; (517)348-7621.

Camp Gruber, Muskogee, Okla. 74423. No AUTOVON; (918)487-5497.

Camp Guernsey, Guernsey, Wyo. 82214. AUTOVON: 943-6396; (307)836-2619.

Pohakuloa Training Area, Hilo, Hawaii 96720. No AUTOVON; (808)969-2425.

Camp Rilea, Astoria, Ore. 97103. AUTOVON: 355-3903; (503)861-3835.

Camp Ripley, Little Falls, Minn. 56345. AUTOVON: 825-4675; (612)632-6631.

Camp Roberts, San Miguel, Calif. 93451. AUTOVON: 949-8210; (805)238-3100.

Camp Joseph T. Robinson, N. Little Rock, Ark. 72118. AUTOVON: 731-5210; (501)758-4053.

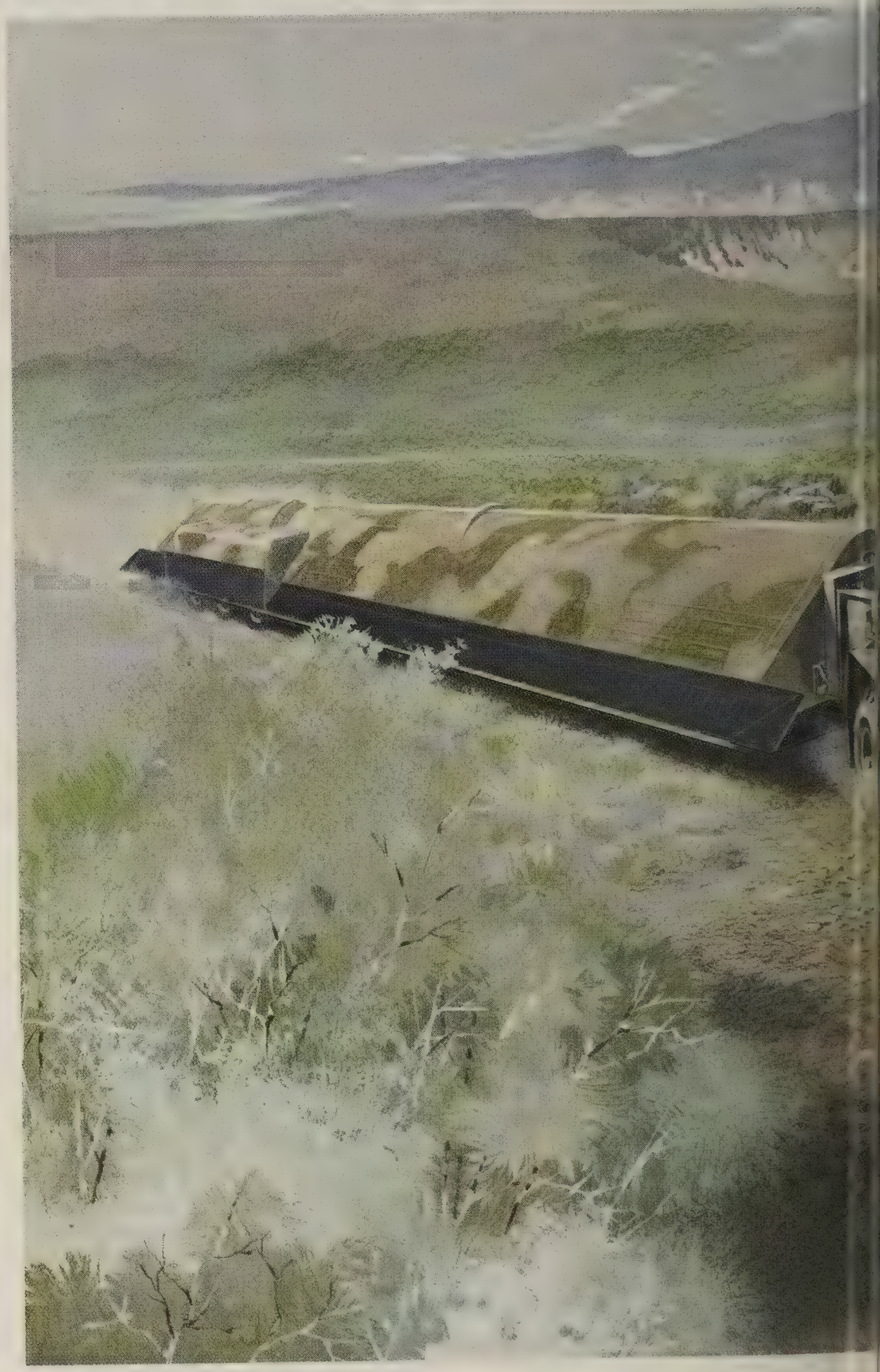
Camp Santiago, Salinas, Puerto Rico 00751. AUTOVON: 860-9165; (809)824-3110.

Camp Shelby, Hattiesburg, Miss. 39407. AUTOVON: 921-2871; (601)545-2871.

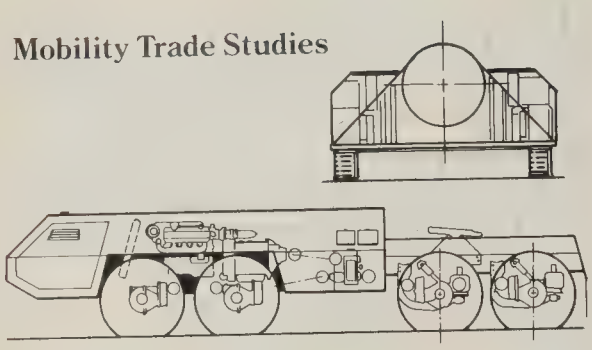
Camp Swift, Bastrop, Tex. 78602. AUTOVON: 954-5071; (512)321-2497.

Camp W. G. Williams, Salt Lake City, Utah 84065. AUTOVON: 924-3732; (801) 524-3732.

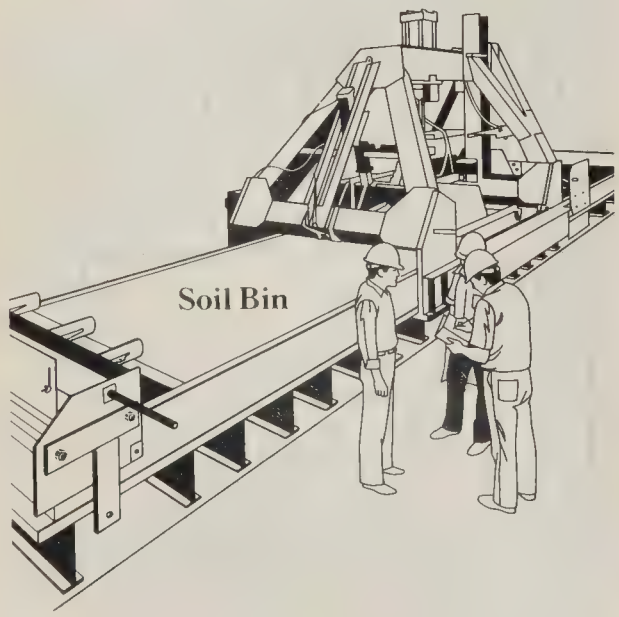
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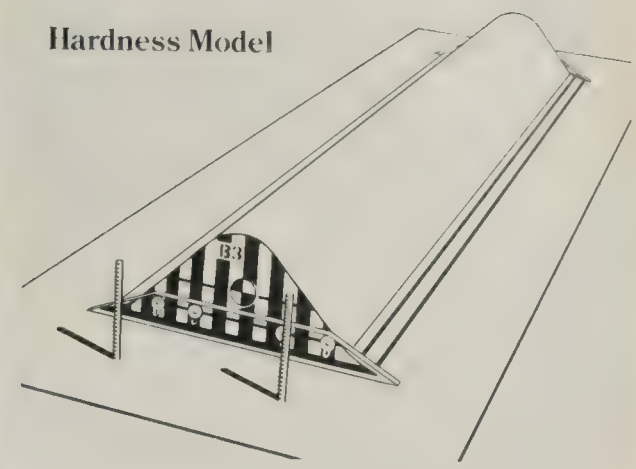
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OR THE SMALL ICBM

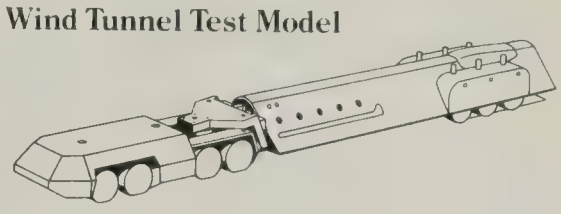


Hardness Model

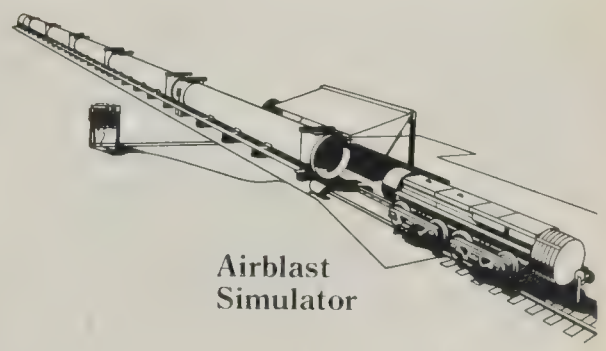


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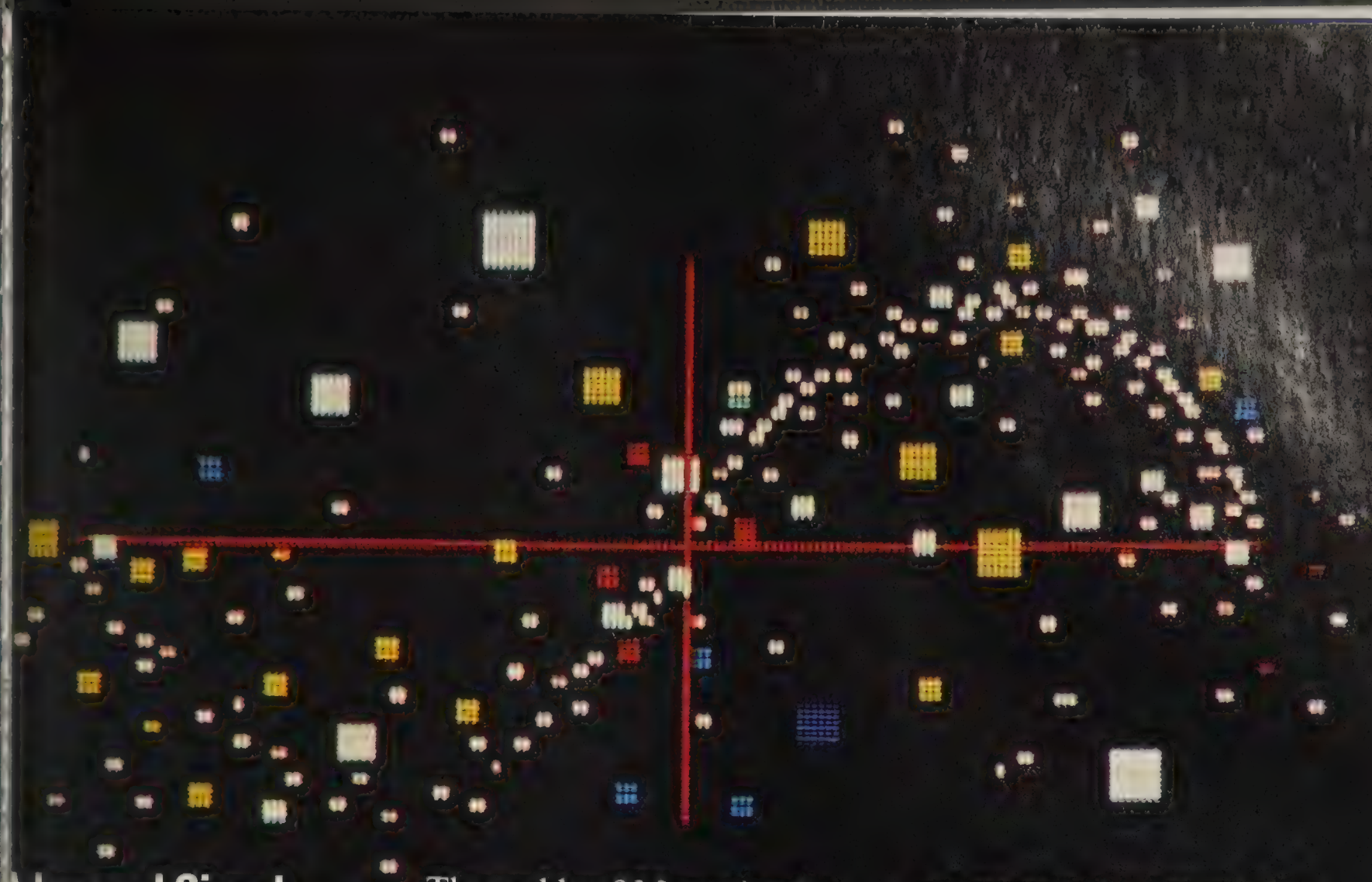
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Separate Combined Arms Brigades And Armored Cavalry Regiments

The following brief histories of the separate combined arms brigades and armored cavalry regiments of the Total Army—active Army, Army National Guard and Army Reserve—were prepared by historians in the Organizational History Branch, Historical Services Division of the Army's Office of the Chief of Military History: Romana Danysh, Wayne M. Dzwonchyk, Stephen Everett, Rebecca Robbins and John B. Wilson. Illustrations of the unit shoulder sleeve insignia were photographed from samples provided by the Army's Institute of Heraldry.

* * *

Berlin Brigade

American troops stationed in the city of Berlin were organized under a brigade structure, known as the U.S. Army Berlin Brigade, by Gen. Bruce Clark in December 1961, at the height of the Berlin crisis. The brigade initially consisted of the 2nd and 3rd Battle Groups, 6th Infantry, and Company F, 40th Armor, as well as an additional battalion that rotated every 90 days. Rather than being organized under a table of organization and equipment (TOE), the brigade headquarters was placed under a table of distribution and allowances (TDA) especially designed to meet the precarious situation in the city. Eventually the crisis of 1961 abated, but East-West tensions remained high with access routes to Berlin under harassment. This situation finally changed when the United States, France, Great Britain and the Soviet Union signed the Quadripartite Agreement, effective on 3 June, 1972, confirming allied access to Berlin. The agreement significantly reduced international tensions and marked the end of an era in East-West relations.

Throughout the 1970s, the Berlin Brigade continued to uphold the American presence in the city. To augment normal training, reward leadership initiatives and foster *esprit de corps,* the brigade introduced "adventure training." During 1973 and 1974, adventure training included mountain training in Italy,



France and Scotland, skiing in southern West Germany, crossing the English Channel in kayaks and scaling the heights behind the Normandy beaches.

On 16 January, 1983, Headquarters, Berlin Brigade, was placed under a TOE, which provided better command and control of manpower, fire support and service support for the brigade's units and brought it into line with other Army brigades. The reorganization formalized a wartime staff, provided the capability for the brigade staff to separate themselves from other command duties in Berlin in the event of operations in the field, and authorized much needed critical equipment not provided for in the TDA. The following year the elements of the 6th Infantry, which had served with the brigade since its formation, were replaced by battalions of the 502nd Infantry as the Army introduced the U.S. Army Regimental System (USARS). Under that system, each regiment has a home base, providing a permanent location in the United States with which soldiers can identify and to which they can return after an overseas assignment. Ft. Campbell, Ky., is the home station of the 502nd.

29th Infantry Brigade

Allotted to the Hawaii Army National Guard on 15 January, 1959, the 29th Infantry Brigade was the first separate combined arms brigade in the reserve components. Its headquarters had been originally organized and federally ognized on 4 January, 1954, at Ft. ger in Honolulu as the 120th Signal port Company. This unit was conve and redesignated in January 195 Headquarters and Headquarters C pany, 29th Infantry Brigade. A m later, Hawaii's 299th Infantry was ganized as a parent regiment unde Combat Arms Regimental System (CA and the 1st and 2nd Battle Groups assigned to the new brigade. In 1963, three infantry battalions repl the two battle groups.

When the Army developed the lected Reserve Force (SRF) in 196 improve combat readiness of som serve components units, the 29th one of six separate brigades incl in the SRF. At that time, it was re nized to consist of National Guard from California as well as Hawa December 1967 and January 196 underwent another major reorganiz The brigade was inducted into a federal service on 13 May, 1968, d the mobilization of reserve forces i wake of the *Pueblo* crisis and th offensive in Vietnam. In addition organic elements from the Hawaii National Guard, the following units attached to the 29th during its tc active duty: the 40th Aviation Com from the California Army National G the 277th Military Intelligence De ment of the Army Reserve from Ari and the famous 100th Battalion, 4 Infantry, an Army Reserve unit Headquarters at Ft. DeRussy, H which had distinguished itself in co



taly and France during World War II. hough many of its members were t to Vietnam as individual replacents for various units, the 29th Infan- Brigade remained in Hawaii as part he Army's strategic reserve. It was tioned at Schofield Barracks, home he 25th Infantry Division, then serv- in Vietnam. Released from active eral service on 12 December, 1969, brigade reverted to state control. 1973, the 29th was reorganized as "roundout" brigade for the 25th In- ry Division, which had only two ac- brigades. The 100th Battalion, 442nd ntry, was also designated as a round- unit for the division. Under the round- concept, the battalion was to be an element of the 29th Infantry ade upon mobilization, with the 29th becoming the third brigade of the Division. As a roundout unit, the ade regularly trains with the division chofield Barracks. After the 3rd Bri- e, 25th Infantry Division, is activated scal 1986, the 29th will no longer a roundout brigade, although it will tinue to be affiliated with the divi- for training.

he brigade's headquarters is at Ft. er, and most of its elements are ted on Oahu, while the rest are sta- ed on other islands in Hawaii.

30th Armored Brigade
Volunteers

he 30th Armored Brigade traces its s to the organization of the 30th Di- n in August and September 1917 at p Sevier, S.C., with men from North lina, South Carolina and Tennessee. ng World War I, the division served the British in Flanders and partici- d in the Somme and Ypres-Lys cam- ns. After the armistice, the 30th was gned to the Le Mans area for train- Elements of the division began re- oying in February 1919, and it was obilized in May at Camp Jackson,

e 30th, supported by units from the onal Guard of Tennessee, the Car- s and Georgia, was reorganized federally recognized in August 1926 Headquarters at Atlanta, Ga. It was of the first divisions to be inducted federal service prior to World War d received its initial training at Ft. son, S.C. In February 1942, the di- n was reorganized and redesignated e 30th Infantry Division. After two years of training, the 30th moved ussex, England.

e division entered combat in Nor- dy on 15 June, 1944, going ashore maha Beach. The fierce battles of on which characterized the Nor-



mandy campaign saw the 30th in heavy fighting around St. Lô, Mortain and Avranches. After advancing to the vicinity of Aachen, the division moved south to help stop the German attack in the Malmédy-Stavelot area during the Battle of the Bulge. With the elimination of the salient created by the German counteroffensive, the 30th took part in the Roer offensive and in March 1945 made an assault crossing of the Rhine River. By V–E Day, the 30th was waiting for the Russians at the Elbe River. After a brief occupation period, the division returned home and was inactivated at Ft. Jackson on 25 November, 1945.

Following World War II, the 30th Infantry Division was allotted to the National Guard of Tennessee and North Carolina. The Tennessee element of the division headquarters was reorganized and federally recognized on 21 February, 1947, at Nashville. On 27 October, 1954, the 30th Infantry Division was divided along state lines, with the North Carolina portion becoming the 30th Infantry Division and the Tennessee elements the 30th Armored Division. In 1968, the 30th Armored Division was allotted to Tennessee, Alabama and Mississippi.

When the National Guard structure was realigned in 1973, three separate brigades were formed from the 30th Armored Division. Headquarters and Headquarters Company, 30th Armored Division, was reorganized and redesignated along with Headquarters Company, 3rd Brigade, 30th Armored Division, to form Tennessee's Headquarters and Headquarters Company, 30th Armored Brigade. This realignment was part of a renewed emphasis on reinforcement of the NATO forces in Europe after American troop strength there had been reduced to support the war in Vietnam. The 30th provided a brigade task force for "Bold Eagle 82." In this exercise, the Tennessee Guardsmen joined the 24th Infantry Division in maneuvers against the 101st Airborne Division. Today's "Volunteers" continue to meet their dual mission for state and federal service.

30th Infantry Brigade
Old Hickory

The 30th Infantry Brigade shares the history of the 30th Division, organized at Camp Sevier, S.C., in August and September 1917. The troops of the "Old Hickory" division, drawn from the Carolinas and Tennessee, fought alongside the British and Australians in Flanders in 1918 and in the Somme and Ypres-Lys campaigns. After the armistice, the division trained in the Le Mans area before elements began redeploying in February 1919. In May, the 30th was demobilized at Camp Jackson, S.C.

The 30th was reorganized and federally recognized in August 1926 with Headquarters at Atlanta, Ga., and elements allotted to North Carolina, South Carolina, Tennessee and Georgia. Inducted into federal service early in the buildup prior to World War II, the 30th received its initial training at Ft. Jackson, S.C. In February 1942, the division was reorganized and redesignated as the 30th Infantry Division. After two years of additional training, it departed for England in February 1944. On 15 June, 1944, while over half of its elements were still unloading at Omaha Beach, the 30th entered combat in Normandy.



During the Normandy campaign, the 30th saw heavy fighting in the hedgerow country before the breakout from the beachhead. After driving eastward to the Siegfried Line, the division got a brief rest period before being rushed south during the Battle of the Bulge to help restore the American positions on the northern shoulder of the German counteroffensive. In January 1945, the 30th helped in the counterattack against the German salient, then moved north to take part in the Roer offensive, and in March 1945 crossed the Rhine River. The 30th advanced to the Elbe River, making contact with Soviet troops by V–E Day. Following occupation duty, the division returned to the United States and was inactivated at Ft. Jackson in November 1945.

After World War II, the division was

allotted to the National Guard of North Carolina and Tennessee. The North Carolina portion of Headquarters, 30th Infantry Division, was reorganized and federally recognized on 11 September, 1947, at Raleigh. In October 1954, the 30th was reorganized along state lines. The North Carolina part remained as Headquarters, 30th Infantry Division, while the Tennessee elements became Headquarters, 30th Armored Division. In 1968, the 30th Infantry Division was allotted to North Carolina, South Carolina and Georgia. The restructuring of the National Guard in 1973 created three separate brigades, one in each of the states formerly supporting the 30th Infantry Division. Headquarters and Headquarters Company, 30th Infantry Division, along with Headquarters Company, 1st Brigade, 30th Infantry Division, became Headquarters and Headquarters Company, 30th Infantry Brigade, with home station at Clinton, N.C. As a separate mechanized infantry brigade, the 30th can deploy as a mission-oriented task force. In September 1983, elements of the brigade took part in the "Display Determination" exercises in Italy as the first reserve components units to deploy overseas with all their weapons and equipment.

31st Armored Brigade

Dixie

The 31st Armored Brigade of the Alabama Army National Guard descends from the 31st Division, which was organized in August 1917 at Camp Wheeler, Ga., with troops from Alabama, Florida and Georgia. The "Dixie" division went overseas during September–November 1918, but never saw action as a unit, its personnel serving as replacements for other organizations. It was demobilized in January 1919. After World War I, the 31st Division was allotted to Alabama, Florida, Louisiana, Mississippi and Tennessee, with Headquarters federally recognized on 15 October, 1924, at St. Augustine, Fla. The Tennessee elements were subsequently relieved from assignment to the division. Headquarters moved to Bartow, Fla., in 1933 and to Birmingham, Ala., in 1940, shortly before the 31st was inducted in federal service on 25 November. In February 1942, it was reorganized as a triangular (three-regiment) division and redesignated the 31st Infantry Division.

After more than three years of training, the division arrived in New Guinea and entered combat in July 1944. Two months later, it made an assault landing on Morotai. Elements of the division also cleared the enemy from the Mapia



and Asia Islands. In April 1945, the 31st landed on Mindanao in the Philippines, and played a major role in its liberation. For its service in World War II, the division received campaign participation credit for New Guinea (with arrowhead, for an assault landing), western Pacific and southern Philippines and was awarded the Philippine Presidential Unit Citation. Inactivated in December 1945 at Camp Stoneman, Calif., the 31st was reorganized in 1946 in Alabama and Mississippi.

The Dixie division was recalled to active federal service during the Korean War. It was not sent overseas but remained in the United States as part of the general reserve and reverted to state control in June 1954. The Alabama part of the division headquarters, which had been federally recognized at Birmingham on 1 November, 1946, moved to Mobile in December 1956 and back to Birmingham in May 1959. Elements of the division were federalized during the integration of the University of Alabama and the Alabama public schools in 1963. They were ordered into active federal service again in 1965 during the civil rights march from Selma to Montgomery, Ala.

In January 1968, the Alabama portion of the 31st Infantry Division was reorganized as the 31st Brigade, 30th Armored Division, with Headquarters at Tuscaloosa. Relieved from assignment to the division on 1 November, 1973, it was reorganized and redesignated as the 31st Armored Brigade. Since becoming a separate brigade, the 31st has improved its combat readiness through a training partnership with the 5th Infantry Division at Ft. Polk, La. The brigade headquarters, which is the direct descendant of Headquarters, 31st Infantry Division, moved from Tuscaloosa to Northport in February 1979. The headquarters company, also stationed at Northport, perpetuates the Warrior Guards of Tuscaloosa and traces its history back to the Civil War.

32nd Infantry Brigade

Red Arrow

The 32nd Infantry Brigade was originally organized in August 1917 at Camp MacArthur, Tex., as the 32nd Division,

with troops from the Wisconsin and Mi
igan National Guard. After arriving
France and receiving its final training
the early months of 1918, the 32nd
vision participated in the Aisne-Mar
Oise-Aisne and Meuse-Argonne ca
paigns, as well as fighting in the Alsa
region. The brigade's shoulder slee
insignia, a barred red arrow, symboli
the *élan* of the troops when they "s
through every line the Boche put bef
them." Before returning to the Uni
States, the 32nd served on occupat
duty in Alsace and Champagne. The
vision was demobilized in May 191
Camp Custer, Mich.

The 32nd Division was reorgani
in July 1924 with troops from Wisc
sin and Michigan and its headquart
at Lansing, Mich. In October 1940,
division was inducted into federal
vice and trained as part of the pro
tive mobilization force. The division
reorganized and redesignated as
32nd Infantry Division in February 1
and, three months later, was sen
Australia to help counter Japanese
cesses in the South Pacific. By the
of the year, elements of the divi
were fighting in the rugged jungle
New Guinea. With their Australian a
the 32nd halted the Japanese attac
Port Moresby. Soon the "Red Arr
went on the offensive, attacking ove
Owen Stanley Mountains and conc
ing amphibious landings along the c
The division captured the Buna Mis
and Tarakena in January 1943 and



returned to Australia for rest and
ing. For its actions during the Pa
campaign, the 32nd was awarde
Army Presidential Unit Citation. T
vision returned to New Guinea in
ber 1943, operating in the area c
the next year. It continued to p
jungle fighting skills to use in the P
pines—on Leyte in late 1944, aft
landing near Lingayen Gulf in Ja
1945, and along the Villa Verde Tr
Luzon. When the war ended, the
was conducting clearing operatic

Philippines. From there, it moved to ıan for occupation duty. The division ıs inactivated on 28 February, 1946, Fukuoka, Japan.

he 32nd Infantry Division was reor-ıized and federally recognized in No-ıber 1946 in Wisconsin with Head-rters at Milwaukee. Called into fed-l service in 1961 during the Berlin is, the 32nd was on active duty for roximately one year. After several rganizations and consolidations, the l Arrow was redesignated in 1967 as ıdquarters and Headquarters Com-y, 32nd Infantry Brigade. Today's l Arrowmen have been assigned the sion of supporting the 207th Infantry up in Alaska. Although training for ission quite different from its jungle ting past, the 32nd continues to pre-e for war on a battlefield no less nuous than those encountered dur-the unit's previous history. Next year brigade will participate in the "Re-er" exercises in Europe.

33rd Infantry Brigade

Prairie

he 33rd Infantry Brigade was orga-d in August 1917 at Camp Logan, , as the 33rd Division, with National rd troops from Illinois. Arriving in ıce during May–June 1918, it en-d combat in July as one of the few ions serving with British and Aus-ın troops. It fought in five campaigns served five months occupation duty uxembourg before returning to the ed States and demobilizing at Camp ıt, Ill., in May 1919.

ıe 33rd was reorganized in the Illi-National Guard with Headquarters Chicago in December 1923. The ıirie" division was inducted into ral service in March 1941 at Chi-) and was reorganized and redesig-d in February 1942 as the 33rd In-y Division. After training at Camp est, Tenn., and in Second Army euvers in Louisiana, the 33rd trans-d to Camp Lewis, Wash., in Sep-ıer 1942 and took part in maneuvers ıe Desert Training Center in the ıg of 1943. The division then spent ar in Hawaii receiving jungle war-training before going into combat ıw Guinea in September 1944. Land-ıt Lingayen Gulf in the Philippines ebruary 1945, the 33rd took part in fighting and mopping-up opera-on Luzon until June 1945. The di-ı then moved to Honshu Island, n, in September 1945. After serv-n occupation duty there, the Prairie ion was inactivated in February

adquarters, 33rd Infantry Division,



was reorganized and federally recognized in November 1946 at Chicago. The headquarters location changed in March 1954 to Urbana, Ill. Headquarters and Headquarters Company of the division was reorganized and redesignated in February 1968 as Headquarters and Headquarters Company, 33rd Infantry Brigade, and other elements of the former 33rd Infantry Division were consolidated with the brigade headquarters company. Detachment 1 of the brigade Headquarters and Headquarters Company perpetuates the famous Chicago Black Horse Troop of the 1930s.

The 33rd was called to active duty in Chicago during the civil disturbances following the assassination of Dr. Martin Luther King Jr. in April 1968 and again in August of that year during the Democratic National Convention. Since the 1970s, the brigade has been targeted for Ft. Benning, Ga., to reinforce the Infantry School in the event of mobilization.

39th Infantry Brigade

The Arkansas Brigade

The 39th Infantry Brigade descends from the 39th Division, which was organized in August 1917 at Camp Beauregard, La., with National Guard troops from Arkansas, Louisiana and Mississippi. When the division arrived in France a year later, it was reorganized as a depot division less its field artillery brigade, engineer regiment and signal battalion. Located southwest of Bourges, the 39th processed replacements for the American Expeditionary Forces until 29 October, 1918. On that date, because of the need for men during the



final drive in the Meuse-Argonne, the division was stripped of its personnel. Never refilled, the division returned to Camp Beauregard and was demobilized in January 1919.

The 39th was not restored to the active rolls of the Army until after World War II when the National Guard force structure was expanded. Reconstituted and allotted to Arkansas and Louisiana, the division headquarters was organized and federally recognized in part at Little Rock, Ark., on 26 August, 1947. Divisional elements, however, had remained active during the interwar years and had fought in the South Pacific, the Aleutian Islands, North Africa, Italy, France and Germany in World War II. During the integration of the Little Rock school system in 1957, Arkansas divisional elements were ordered into federal service, but most remained at their home stations.

When the National Guard force structure was realigned in 1967 and 1968 to meet new mobilization requirements, the 39th Infantry Division was eliminated, and the Arkansas elements were reorganized as the 39th Infantry Brigade. Shortly thereafter, the brigade was designated as a unit of the Selected Reserve Force, to be brought to a high state of readiness and available to reinforce troops in either Vietnam or Europe. That mission was discontinued in May 1969 when the secretary of the Army directed that the readiness of all reserve units be improved. Since 1975, the "Arkansas Brigade" has been affiliated with the 101st Airborne Division at Ft. Campbell, Ky., under programs to increase readiness and meet mobilization contingencies.

41st Infantry Brigade

The 41st Infantry Brigade perpetuates the Oregon portion of the 41st Division, organized in September 1917 at Camp Greene, N.C., with National Guard troops from the western United States and the District of Columbia. The "Sunset" division was shipped to France during World War I but was designated as a depot division and never fought as a unit. Artillery elements, however, fought in major operations. The division returned to the United States in February 1919 and was demobilized at Camp Dix, N.J.

The 41st Division was reorganized in 1930 with troops from Washington, Oregon, Montana, Wyoming and Idaho. The Wyoming elements were subsequently reassigned elsewhere. In 1937, the division participated in maneuvers at Ft. Lewis, Wash., against troops of the 5th Infantry Brigade commanded by then-Brig. Gen. George C. Marshall. The divi-



sion was inducted into federal service in September 1940 at Camp Murray, Wash., and trained there, at California maneuvers, and at Ft. Lewis in 1940 and 1941.

Reorganized and redesignated in February 1942 as the 41st Infantry Division, it sailed for the Pacific the following month and arrived in Australia in early April. Elements of the division entered combat in the defense of Port Moresby, New Guinea, and went on to fight in a long succession of jungle battles and island landings, including Salamaua, Hollandia, Arare and Wakde Island, earning the nickname "Jungleers." Some of the harshest fighting followed the assault on Biak Island in May and June 1944. The Jungleers moved to the Philippines in February 1945, making an assault landing on Mindanao in March. The division fought in the southern Philippines until V–J Day. After occupation duty in Japan, the 41st was inactivated there in December 1945. Following World War II, the division was allotted to the National Guard of Washington and Oregon. The Oregon portion of the division headquarters was organized and federally recognized in March 1948 at Portland.

In 1965 the Oregon elements of the 41st Infantry Division were withdrawn to form the 41st Infantry Brigade, which was assigned to the Selected Reserve Force (SRF), a force designed to augment U.S. troops in Southeast Asia in certain contingencies. The brigade remained in the SRF until 1967. In 1968, Headquarters and Headquarters Company, 41st Infantry Division (Oregon part), was consolidated with Headquarters and Headquarters Company, 41st Infantry Brigade. In the mid-1970s, the brigade was assigned as a roundout unit for the 7th Infantry Division at Ft. Ord, Calif. As a roundout brigade, it replaced an inactive divisional brigade. Headquarters, 41st Infantry Brigade, commanded all U.S. ground forces in exercise "CRISEX 81," on the southern coast of Spain, including Regular Army elements of the 7th Infantry Division. When the 7th Infantry Division completes its transition to a light division, the brigade will no longer have the roundout role, but will continue its close relationship with the division.

45th Infantry Brigade

Thunderbird

The 45th Infantry Brigade was originally organized and federally recognized in the early 1920s as the 45th Division with Headquarters at Oklahoma City, Okla. The division was made up of National Guard units from Oklahoma, Colorado, New Mexico and Arizona. Inducted into federal service in September 1941 with some 1,500 American Indians among its troops, the "Thunderbird" division was assigned to Ft. Sill, Okla. During training in Louisiana, Massachusetts, New York and Virginia, the division was reorganized and redesignated as the 45th Infantry Division to conform to the streamlined triangular divisional structure the Army adopted at the beginning of World War II.

The division sailed for French Morocco in June 1943 and was soon in combat. It took part in three assault landings: Sicily, Salerno and southern France. Following "Bloody Ridge" in Sicily, the Salerno landing and the Volturno River crossings, the division reinforced the Anzio landing in January 1944 and participated in the breakout from the beachhead in May. After the liberation of Rome, the division moved to southern France in August. It spearheaded the drive for the Belfort Gap, crossed the



Moselle River and entered the Vosges Mountains in September. Penetrating the German defenses in Alsace in November and December, the Thunderbird helped to repulse the *Nordwind* offensive in January 1945. In March, it attacked the Siegfried Line, entered the Saar and crossed the Rhine. After taking Nürnberg and vaulting the Danube River, the division helped to liberate the Dachau concentration camp. At the end of the war, it was marching through Munich. The Thunderbird division returned to the United States and was inactivated at Camp Bowie, Tex., in December 1945.

The 45th Infantry Division, allotted to the Oklahoma National Guard, was reorganized and federally recognized in September 1946 with Headquarters at Oklahoma City. Four years later, the division was again ordered into active federal service and was the first National Guard division in combat in l
rea. Fighting among rugged terrain f
tures like Baldy and T–Bone Hill, it ser
in four campaigns during the Kore
War. It was returned to state service
April 1954. In February 1968, the 4
Infantry Division was eliminated fr
the National Guard, and elements w
reorganized and redesignated as
45th Infantry Brigade with Headquar
at Edmond. Since then it has trai
for new federal missions as a thea
defense force and serves the state
various roles.

48th Infantry Brigade

Headquarters and Headquarters C
pany, 48th Infantry Brigade, dates b
to 23 April, 1825, when it was organi
in the Georgia Volunteer Militia as
Macon Volunteers. Since then, it
been reorganized and redesignated m
times and has been consolidated
several other units from Macon, Ga.
cluding the Floyd Rifles (organize
1841) and the Macon Hussars (o
nized in 1889). These units fought in
Second Seminole War and served
Confederate forces in five campaign
the Civil War. They were also must
into federal service during the Mex
War and the War with Spain and
duty on the Mexican border in 1916
1917. In World War I, they saw a
in six campaigns as companies of
151st Machine Gun Battalion, an
ment of the 42nd Division, which
organized from National Guard uni
26 states and the District of Colu

Inducted into federal service o
September, 1940, the predecesso
Headquarters and Headquarters C
pany, 48th Infantry Brigade, serve
Europe during World War II as the
Reconnaissance Troop, Mechanize
element of the 30th Infantry Divi
and as companies of the 121st Inf
assigned to the 8th Infantry Divi
They participated in the campaig
Normandy, northern France, Rhine
Ardennes-Alsace and central Eu
and were awarded the Army Pres
tial Unit Citation, the Army Merito
Unit Commendation, the Frech *Cro
Guerre* with Palm, the Luxembourg
de Guerre and the Belgian *Fourra*

In the postwar reorganization c
National Guard, the 48th Infantry
sion was allotted to the states of
gia and Florida. When it was conv
to an armored division on 1 Nove
1955, the former Macon Volunteer
came Headquarters and Headqu
Company, Combat Command B,
Armored Division. This unit was re
nized and redesignated as Headqu
and Headquarters Company, 1st Br



ı Armored Division, on 16 April, 1963, ın the entire division was allotted to Georgia Army National Guard. Dur- a major realignment of the reserve ıponents in 1967 and 1968, the 48th ıored Division was eliminated from force structure, and the 3rd Brigade, ı Infantry Division, was organized in rgia. It was reorganized and redesig- d on 1 December, 1973, as the 48th ntry Brigade, a separate mechanized ntry brigade with Headquarters and dquarters Company at Macon.

hortly after the reactivation of the Infantry Division in September 1975, t. Stewart, Ga., the 48th Infantry ade was designated as a roundout for the division. Upon mobilization, National Guard brigade would be- e an integral part of the Regular y division. As a roundout brigade, 48th maintains a high level of readi- s, receives modern equipment and uently trains together with its sister s of the 24th Infantry Division. The ade's 1st Battalion, 108th Armor, the first unit in the reserve com- ents to get the modernized M60A3 and also the first to participate in ining rotation at the National Train- Center, Ft. Irwin, Calif.

53rd Infantry Brigade

though the 53rd Infantry Brigade ot become a part of the Florida Ar- National Guard until 1968, its head- ters was organized and federally gnized in December 1921 as Bat- B, 116th Field Artillery, an element e 31st Division. The unit was in- ed into federal service in November at its home station in Tampa, trained the 31st Division at Camp Bland- Fla., and later moved with the divi- to Camp Bowie, Tex.

hen the 31st Division was reorga- d as the 31st Infantry Division in uary 1942, the 116th Field Artillery also reorganized and Battery B be- e part of the 116th Field Artillery alion. The battalion, together with ther units of the 31st Infantry Divi- sion Artillery, received additional training at the Field Artillery School, Ft. Sill, Okla., before rejoining the 31st at Camp Bowie and later moving to Camp Shelby, Miss. The 31st participated in the 1942 and 1943 Louisiana maneuvers and received final predeployment training at Camp Pickett, Va.

The 116th Field Artillery Battalion deployed to the Pacific with the 31st in March 1944 and arrived in Oro Bay, New Guinea, by April. Battery B, 116th Field Artillery Battalion, fired in support of divisional elements at Maffin Bay in August 1944, on Morotai Island in September and on Mindanao in the Philippines from April 1945 until the Japanese surrender. For its World War II service, the unit earned campaign participation credit for New Guinea (with arrowhead) and southern Philippines as well as the Philippine Presidential Unit Citation. The battalion left Mindanao at the end of November 1945 and arrived at San Francisco in December. It was inactivated on 20 December, 1945, at Camp Stoneman, Calif.

Reorganized and federally recognized in April 1947, Battery B, 116th Field Artillery Battalion, was assigned to the 51st Infantry Division. Under the Combat Arms Regimental System, the unit



was redesignated in April 1959 as Battery B, 1st Howitzer Battalion, 116th Artillery. In February 1963, the battery was consolidated with the Florida portion of Headquarters and Headquarters Company, 51st Infantry Division, and the 51st Administration Company (organized in November 1946). The consolidated unit was relieved from assignment to the 51st Infantry Division and redesignated as the 53rd Infantry Brigade. The following year, the brigade was converted and redesignated as Headquarters and Headquarters Company, 53rd Armored Brigade. After consolidation with Headquarters and Headquarters Battery, 163rd Artillery Group, in January 1968, the unit was redesignated as Headquarters and Headquarters Company, 53rd Infantry Brigade. During the May 1980 riots in the Liberty City section of Miami, the brigade assisted local authorities in restoring peace to the troubled areas. With training facilities located at Camp Blanding, the 53rd continues to prepare for its special mission of supporting the 193rd Infantry Brigade in Panama.

58th Infantry Brigade

The 58th Infantry Brigade traces its history back to Headquarters, 29th Division, which was originally organized on 25 August, 1917, at Camp McClellan, Ala. The division deployed to France in July 1918 and entered front-line positions in the Alsace region in September 1918, participating in the Meuse-Argonne offensive which precipitated the German collapse. After the armistice, the 29th Division served on occupation duty before being demobilized on 30 May, 1919, at Camp Dix, N.J.

Reorganized and federally recognized on 31 July, 1923, the 29th Division was allotted to the National Guard of Maryland, Virginia and the District of Columbia, with Headquarters at Washington, D.C. Inducted into federal service on 3 February, 1941, the 29th assembled at Ft. George G. Meade, Md. In March 1942, it was reorganized and redesignated as the 29th Infantry Division. Six months later, the 29th deployed to Scotland. The 29th was one of the assault divisions for the Normandy invasion, with elements joining the 1st Infantry Division in the first wave of troops attacking Omaha Beach. After some of the bloodiest fighting of the day, these troops controlled an exit off the beach. With the expansion of the allied toehold on the continent, the 29th saw action at St. Lô and Brest and later moved to help break the Siegfried Line near Aachen. In November 1944, the division began an offensive aimed at the Roer and held defensive positions along the river during the German counteroffensive in the Ardennes. The division crossed the Roer in late February 1945, and by mid-April it had reached the Elbe River. With the end of the fighting, the division was again placed on occupation duty at Bremen, which was the port for the American zone of occupation. Elements of the division began leaving Bremen for the United States at Christmastime 1945, and the 29th was inactivated on 17 January, 1946, at Camp Kilmer, N.J.

The 29th Infantry Division was soon back in state service, allotted to the National Guard of Maryland and Virginia. The Maryland portion of division headquarters was reorganized and federally recognized on 17 July, 1947, at Baltimore. With the realignment of the National Guard structure to conform to mobilization requirements in 1968, the



division was broken up, and many of its elements were assigned to the 28th Infantry Division. The Maryland portion of Headquarters and Headquarters Company, 29th Infantry Division, was consolidated with Headquarters and Headquarters Company, 3rd Brigade, 29th Infantry Division, and the consolidated unit was reorganized and redesignated as Headquarters and Headquarters Company, 3rd Brigade, 28th Infantry Division. In December 1971, the unit was reorganized and redesignated as Headquarters and Headquarters Company, 58th Brigade, 28th Infantry Division. Four years later, it was relieved from assignment to the 28th Infantry Division and reorganized and redesignated as Headquarters and Headquarters Company, 58th Infantry Brigade, a separate brigade in the Maryland Army National Guard. Located at Pikesville since October 1981, the brigade is once again preparing to become an element of the 29th Infantry Division, which will be the only light infantry division in the National Guard.

73rd Infantry Brigade

The 73rd Infantry Brigade descends from elements of the 37th Division, which was initially organized at Camp Sheridan, Ala., in August 1917 with troops from the Ohio National Guard. Deploying to France in June 1918, the division completed training in the Bourmont area. The "Buckeye" division first saw action in the Baccarat sector of Lorraine and went on to participate in the Meuse-Argonne and Ypres-Lys campaigns. Following the armistice, the division moved to Belgium, where it remained until January 1919. The unit was subsequently stationed in several training areas in France, and elements began redeploying in March 1919. Division headquarters was demobilized on 23 June, 1919, at Camp Sherman, Ohio.

When the division was reorganized in the Ohio National Guard in 1923, its headquarters was located at Columbus. The division was inducted into federal service on 15 October, 1940, and sent to Camp Shelby, Miss., for training as war clouds gathered. Six months after the United States entered World War II, the 37th was shipped to the Fiji Islands to fortify them against possible invasion. In the mud and mangrove swamps of New Georgia Island, the division earned new laurels in 1943 for its role in the northern Solomon Islands campaign. From there, the division moved to several other Pacific islands and eventually took part in the liberation of the Philippines. It participated in the Luzon campaign and was awarded the Philippine Presidential Unit Citation. With the end of hostilities, men of the Buckeye division collected and processed prisoners of war in the Philippines until November 1945. At that time, the division left the islands for the United States and was inactivated on 18 December, 1945, at Camp Anza, Calif. The 37th was the only National Guard division to serve through the entire war under only one commander, Maj. Gen. Robert S. Beightler.



After World War II, the division was reorganized in 1946 with Headquarters again at Columbus. As the Army increased the number of divisions in the active component during the Korean War, the 37th was called into federal service for the third time. It reported to Ft. Polk, La., where it became a part of the general reserve, units intended to reinforce the Army in either the Pacific or European areas. Although the division did not deploy overseas, before leaving federal service in June 1954 it participated in the first atomic warfare maneuvers at Ft. Bragg, N.C.

In 1968, Headquarters, 37th Infantry Division, was reorganized and redesignated as Headquarters, 73rd Brigade, 38th Infantry Division, and other Ohio units as well became a part of that division. Headquarters Company, 3rd Brigade, 37th Infantry Division (organized in 1920), was reorganized and redesignated as the headquarters company of the new brigade. In 1977, the Ohio National Guard elements were withdrawn from the 38th Infantry Division and reorganized as the 73rd Infantry Brigad
As a theater defense brigade on the
tensive management force list, the 73
has priority for receipt of new equ
ment for force modernization.

81st Infantry Brigade

The 81st Infantry Brigade perpetua
the Washington portion of Headqu
ters, 41st Division, organized in S
tember 1917 at Camp Greene, N.
with National Guard troops from
western United States and the Dist
of Columbia. The "Sunset" division w
to France during World War I, wher
served as a depot division. In Febru
1919, it was demobilized at Camp
N.J.

The division was reorganized in 1
and allotted to the states of Washi
ton, Oregon, Montana, Wyoming and
ho. By the time of its induction into
eral service in September 1940, the
vision's recruiting area had been
duced to the four states of Washing
Oregon, Montana and Idaho. Train
was conducted at Camp Murray, Wa
in the California maneuvers in June
July 1941, and at Ft. Lewis, Wash

Reorganized and redesignated in F
ruary 1942 as the 41st Infantry Divis
it sailed for the Pacific the follov
month and arrived in Australia in e
April. After several months of inten
training in jungle and amphibious
fare, the division received its baptis
fire on New Guinea, where it earned
nickname "Jungleers." Some of
harshest fighting was that on Bia
land in May and June 1944. The
sion moved to the Philippines in Fe
ary 1945, making an assault landin
Mindanao in March. It continued to
in the southern Philippines until
Day. For its service there, the div
was awarded the Philippine Preside
Unit Citation. Occupation duty in Ja
followed, and the 41st was inactiv
there in December 1945.

After World War II, the division
allotted to the National Guard of W
ington and Oregon. The Washington
tion of the division headquarters
organized and federally recognize
March 1948 at Seattle. In 1965,



nts of the division were withdrawn to n the 41st Infantry Brigade, reduc- the division strength by one-third. ee years later, the 41st Infantry Divi- was eliminated from the force struc- , and the Washington divisional ele- nts were reorganized as the 81st In- ry Brigade. In the mid-1970s, the bri- e was affiliated with the 9th Infantry sion for training. In addition to pre- ng for combat, the brigade provides ps for state service. In May 1980, nents of the brigade took part in the ue and cleanup operations follow- the eruption of Mount St. Helens.

92nd Infantry Brigade

ne 92nd Infantry Brigade, Puerto Army National Guard, perpetuates nents of the 295th Infantry, which originally organized and federally gnized in 1922 at San Juan as part ie 1st Infantry (Puerto Rico National rd). Later redesignated as the 295th try, it was inducted into federal ser- in October 1940 at Camp Tortugera. uerto Rico National Guard troops a major military asset in the Carib- during the early part of World War specially when intensive German U– action threatened maritime trans- there. They also helped to stabilize area in the face of competition by pean governments-in-exile for con- f strategically important island pos- ions. The 295th was a part of the Army-Marine task force organized he occupation of Vichy-controlled inique, but Gaullist forces took over sland before the occupation could arried out. Subsequently, the 295th ed to Trinidad to guard installations rtant to America's war production then to the Panama Canal Zone to ct that vital waterway. For service orld War II, the unit displays the rican Theater Campaign streamer s flag. The regiment was inactiva- n the Canal Zone in early 1946. e 295th Infantry was reorganized federally recognized in September with Headquarters in San Juan. In ber and November 1950, the regi- played a major role in suppress- n anti-American nationalist revolt, ied off by opposition to a planned for a new constitution for the is- In February 1959, Headquarters pany, 2nd Battalion, 295th Infantry; attalion (less Company C), 295th try; Headquarters Company, 3rd lion, 295th Infantry; and the Medi- ompany, 296th Infantry were con- ted, reorganized and redesignated adquarters and Headquarters Com- 92nd Infantry Brigade. The 92nd ne of the first three separate com-



bined arms brigades in the reserve components.

Over the last 25 years, the brigade has served as a part of the forces vital for the defense of the Caribbean basin. It has also carried out numerous commonwealth and humanitarian missions. Elements of the brigade were called out in July 1973 to restore order in many areas of the island when violence and sabotage accompanied massive strikes by power company workers and firemen. In 1980 and 1981, the 92nd went to Costa Rica as the first Army National Guard unit to provide disaster relief outside the continental United States.

116th Infantry Brigade

Although the 116th Infantry Brigade of the Virginia Army National Guard was not organized as a separate combined arms brigade until 1975, the lineage of its Headquarters and Headquarters Company begins in 1858. Originally organized on 17 March, 1858, in the Virginia Militia at Staunton as the West Augusta Guard, a volunteer company in the 32nd Regiment, the unit was mustered into Confederate service on 1 July, 1861, as Company L, 5th Virginia Infantry. It participated in 18 Civil War campaigns before surrendering on 9 April, 1865, at Appomattox Court House with the Army of Northern Virginia.

Reorganized in 1874 at Staunton, the company served under various designations in the Virginia Volunteers (redesignated in 1916 as the Virginia National Guard). It was mustered into federal service for the War with Spain in 1898 and for duty on the Mexican border in 1916 and 1917. During World War I, it served overseas as an element of the 29th Division and received campaign participation credit for Meuse-Argonne and Alsace, 1918. Inducted into federal service on 3 February, 1941, as Company L, 116th Infantry, it served again with the 29th Infantry Division in Europe during World War II. Landing on Omaha Beach on D–Day, the company earned both the Army Presidential Unit Citation and the French *Croix de Guerre* with Palm for its extraordinary heroism during the Normandy invasion. It also participated in the northern France, Rhineland and central Europe campaigns. After occupation duty in Germany, it returned to the United States and was inactivated on 6 January, 1946, at Camp Kilmer, N.J. The unit was reorganized and federally recognized at Staunton on 5 March, 1947, remaining assigned to the 29th Infantry Division.

When the division was eliminated from the force structure during a major realignment of the reserve components in 1967 and 1968, its 2nd Brigade, allotted to the Virginia Army National Guard, was reorganized as the 116th Brigade, 28th Infantry Division. On 1 April, 1975, the Virginia elements were relieved from assignment to the division and reorganized as the 116th Infantry Brigade. At the same time, sev-



eral units from Staunton were consolidated to form the brigade's Headquarters and Headquarters Company. Subordinate elements currently assigned to the brigade include units with long and distinguished histories, such as the 183rd Cavalry (Richmond Light Infantry Blues), originally organized in 1789, and the 116th Infantry (Stonewall Brigade), which dates back to 1741. Upon organization of the 29th Infantry Division (Light), scheduled for fiscal 1986, the 116th Infantry Brigade will end its role as a separate brigade, and its elements will be reorganized as divisional units.

155th Armored Brigade

The 155th Armored Brigade dates from 12 April, 1951, when Headquarters and Headquarters Company, 108th Armored Cavalry Group, was organized and federally recognized in the Mississippi Army National Guard at Tupelo. Four years later the unit was reorganized and redesignated as Headquarters and Headquarters Company, 108th Armored Cavalry. Elements of the regiment were formed from new and existing units in the state, including the 750th Tank Battalion. When the federal dis-



trict court ordered the integration of the University of Mississippi, the 108th Armored Cavalry was called into federal service and sent to Oxford, Miss., where it served from 30 September to 23 October, 1962.

During the realignment of the Army National Guard force structure in 1967 and 1968, the number of armored cavalry regiments was reduced from seven to four. Only one squadron of the 108th Armored Cavalry was retained, and the headquarters company of the regiment was reorganized and redesignated as Headquarters and Headquarters Company, 1st Brigade, 30th Armored Division, which was supported by elements from Mississippi, Alabama and Tennessee. In 1973, the 30th Armored Division was broken up, and Headquarters and Headquarters Company, 1st Brigade, became Headquarters and Headquarters Company, 155th Armored Brigade, at Tupelo. Brigade elements included two battalions of the 198th Armor and one battalion of the 155th Infantry. The latter was originally organized in 1798 and has served in six wars. During the Mexican War, under the command of Col. Jefferson Davis, later the President of the Confederate States of America, it was known as the Mississippi Rifles.

Beginning with annual training in 1980, the 155th Armored Brigade was tied to the 5th Infantry Division in the active Army-reserve components partnership program, which was designed to provide year-round training support for reserve units to improve readiness. In 1983, the brigade was designated as a roundout unit for the 1st Cavalry Division, a Regular Army division that maintains only two active brigades. The 155th Armored Brigade is slated to serve as the third brigade of the division upon mobilization.

157th Infantry Brigade

An element of the 79th Division, the 157th Infantry Brigade was organized in the National Army in August 1917 at Camp Meade, Md. The brigade went overseas in July 1918, where it participated in the Lorraine and Meuse-Argonne campaigns. After a short period of occupation duty, the 157th returned to the United States and was demobilized in June 1919 at Camp Dix, N.J.

The 157th Infantry Brigade was reorganized in the Organized Reserves in November 1921 at Wilkes-Barre, Pa., as an element of the 79th Division. When divisional infantry brigades were eliminated in 1942, the headquarters and headquarters companies of the 157th and 158th Infantry Brigades were consolidated as the 79th Reconnaissance Troop, 79th Division. The unit was ordered into active military service in June 1942 and reorganized as the 79th Cavalry Reconnaissance Troop at Camp Pickett, Va. In April 1944, it left the United States for England. Shortly after the Normandy invasion, the troop, along with its parent division, entered combat and eventually participated in five campaigns. The troop was awarded the French *Fourragère* and two French *Croix de Guerre,* one for action between Normandy and Paris and the other for fighting in the Parroy Forest. After the war, the 79th served on occupation duty and then returned to Camp Kilmer, N.J., where it was inactivated in December 1945.

In January 1947, the unit was reactivated in the Organized Reserves (later the Army Reserve) at Philadelphia, Pa., as the 79th Mechanized Cavalry Reconnaissance Troop, remaining an element of the 79th Infantry Division. To conform to post-World War II tables of organization and equipment, its designation was changed in 1949 to the 79th Reconnaissance Company. The company was inactivated in April 1959 at Philadelphia when a reconnaissance squadron replaced the company in the infantry division's structure.

In 1962, elements of the 79th Reconnaissance Company were restored to their prewar designations as Headquarters and Headquarters Companies of the 157th and 158th Infantry Brigades. The 157th Infantry Brigade was activated in January 1963 as a mechanized infantry brigade with Headquarters at Up Darby, Pa. Many of its elements h formerly been assigned to the 79th fantry Division. In 1967, the brigade designated as a Selected Reserve Fo unit capable of reinforcing troops either Europe or Vietnam, a role was discontinued in 1969. During Vietnam era, the brigade was als part of a force to quell civil disturban Today the brigade, which has its he quarters at Horsham, Pa., is suppo by units in New Jersey and Pennsylva



172nd Infantry Brigade

Snow Hawks

The 172nd Infantry Brigade was o nized in August 1917 at Camp Grant as an element of the 86th Division, w adopted the nickname "Black Haw commemorating the 85th anniversa the end of the Black Hawk War in nois. After training for almost a y the brigade, along with the rest of division, deployed to France, whe went into the area east of Bordeau additional instruction in trench war



Before the division could enter cor it was stripped of most of its pers to provide much-needed replacem for the American Expeditionary Fo The brigade was not refilled, an unit returned to the United Stat January 1919 to be demobilized at Grant. Although the brigade di serve in combat, it received a wa vice streamer for World War I.

In 1922, the brigade was reorga in the Organized Reserves (later th my Reserve) as part of the 86th sion and was located at Springfie During the interwar years, the br consisted mostly of unpaid Reser ficers. When war broke out in E in 1939, the Army was evaluating fantry division structure, which re in the elimination of the brigade lon in divisions. The headquarter headquarters companies of the and 172nd Infantry Brigades were solidated as the 86th Reconnais Troop, 86th Division. The unit w dered into active military service

ember, 1942, at Camp Howze, Tex., the 86th Cavalry Reconnaissance op. After leaving Camp Howze, the p trained in Louisiana and California. unit arrived at Le Havre, France, in y March 1945 and participated in the tral Europe campaign. Because of imited time in combat, the division rned to the United States in June 5 and was refitted for deployment to Pacific theater. The troop left San ncisco for the Philippine Islands and ed on Leyte on 7 September, 1945. emained there until 30 December, 5, when it was inactivated as the 86th hanized Reconnaissance Troop.

1963, the 3rd Platoon, 86th Mech- ed Reconnaissance Troop, was re- gnated as Headquarters and Head- ters Company, 172nd Infantry Bri- e, withdrawn from the Army Reserve allotted to the Regular Army. It was ated on 1 July, 1963, at Ft. Richard- Alaska, as a mechanized infantry To perpetuate the association with Black Hawks, the brigade adopted nickname "Snow Hawks" in 1966. name also characterizes the mis- of the brigade. In 1970, the bri- e was reorganized as a light infantry with fewer ground vehicles and tantially greater airmobility. One pany in each of the brigade's three ntry battalions is organized as an orne unit. Plans call for the brigade ecome the nucleus of the 6th In- y Division (Light) upon the division's ation in fiscal 1986.

187th Infantry Brigade

e 187th Infantry Brigade was or- zed in November 1921 in the Or- zed Reserves at Boston, Mass., and ned to the 94th Division. In 1942, the brigade echelon was elimi- d from infantry divisions, the head- ers and headquarters companies e 187th and 188th Infantry Brigades combined as the 94th Reconnais- e Troop, 94th Division. Ordered in- tive military service in September at Camp Custer, Mich., the unit reorganized as the 94th Cavalry nnaissance Troop, an element of 94th Infantry Division. The troop ed in Kansas, Tennessee and Mis- ipi before going overseas in August Landing in Normandy two months D–Day, it served in the northern e, Rhineland, Ardennes-Alsace and al Europe campaigns. In mid-April the troop along with its parent on was assigned military govern- duties in the Krefeld and Düssel- areas in Germany and later took cupation duties in Czechoslovakia. ning to the United States, the troop



was inactivated at Camp Kilmer, N.J., in February 1946.

Redesignated as the 94th Mechanized Cavalry Reconnaissance Troop, it was reactivated in February 1947 in the Organized Reserves (later the Army Reserve) at Boston. Two years later the unit was redesignated as the 94th Reconnaissance Company. In March 1953, its location was changed to Cohasset, Mass., where it was inactivated in 1959.

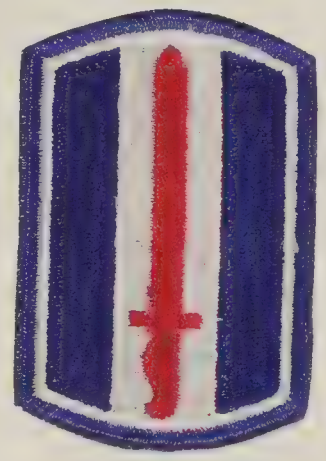
The 94th Reconnaissance Company (less the 3rd Platoon) was converted and redesignated as Headquarters and Headquarters Company, 187th Infantry Brigade, and activated in January 1963 at Boston. Most of the brigade elements were former units of the 94th Infantry Division, which was inactivated at that time. Since 1963, the location of brigade headquarters has changed twice, first to Wollaston and then to Ft. Devens, Mass., where it is today. Elements of the brigade are located in Massachusetts, New Hampshire, Maine, New York and Pennsylvania where, in addition to their military duties, they stand ready to assist local communities in emergencies. Targeted to support European defense forces upon mobilization, the 187th is slated to deploy to Iceland, if necessary.

193rd Infantry Brigade

The 193rd Infantry Brigade was organized in June 1922 with Headquarters at Augusta, Me., as an element of the 97th Division in the Organized Reserves. As a Reserve unit during the interwar years, the brigade consisted primarily of officers. In 1942, the brigade echelon was eliminated from infantry divisions, and as a result, the headquarters and headquarters companies of the 193rd and 194th Infantry Brigades were consolidated to form the 97th Reconnaissance Troop, 97th Division. The unit was ordered into active military service on 25 February, 1943, and reorganized at Camp Swift, Tex., as the 97th Cavalry Reconnaissance Troop.

During World War II, the troop served overseas with the Fifteenth, First and Third Armies of the 12th Army Group and participated in the central Europe campaign. In that campaign, the 97th Infantry Division aided in the liquidation of the Ruhr pocket. Following the surrender of Germany, the troop returned to the United States and, after a short training period at Ft. Bragg, N.C., moved to the San Francisco Port of Embarkation, where it was located when the war ended. The unit nevertheless continued on its way to the Pacific and served occupation duty in Japan prior to its inactivation in that country in March 1946.

The implementation of the "Reorganization Objective Army Divisions" (ROAD) concept in 1962 brought about the rebirth of the infantry brigade. The 97th Mechanized Cavalry Reconnaissance Troop was relieved from assignment to the 97th Infantry Division, withdrawn from the Army Reserve, and allotted to the Regular Army; concurrently, Headquarters and Headquarters Companies of the 193rd and 194th Infantry Brigades were reestablished. The 193rd Infantry Brigade was activated on 8 August, 1962, at Ft. Kobbe, Canal Zone, as a



mobile force for swift intervention in case of trouble in Latin America. The brigade initially included three infantry battalions, one of which was an airborne unit. In 1968, the airborne battalion was replaced by an infantry battalion, but the brigade did not lose its airborne capability, for one company in each of the three maneuver battalions took on that mission. Today, the brigade consists of two infantry battalions (one company of one battalion remaining airborne), a field artillery battalion and a support battalion. Brigade headquarters is at Ft. Clayton, Panama.

In addition to serving as a mobile force for the nation's southern flank, the brigade has participated in numerous humanitarian missions, such as the deployment of medical teams, helicopters, vehicles and communications equipment to alleviate the suffering which resulted from the severe flooding in Nicaragua between October 1979 and February 1980.

194th Armored Brigade

The 194th Armored Brigade was placed on the active rolls of the Army in June 1922 as the 194th Infantry Brigade, an element of the 97th Division, with Headquarters at Concord, N.H. Personnel for the brigade's elements were drawn from the Organized Reserves in the New England states. In early 1942, the headquarters and headquarters companies of the division's two infantry brigades, the 193rd and 194th, were converted and consolidated to form the 97th Reconnaissance Troop, 97th Division, to retain their history in the triangular infantry division structure. Ordered into active military service on 25 February, 1943, the unit was reorganized at Camp Swift, Tex., as the 97th Cavalry Reconnaissance Troop.

The 97th Infantry Division trained in Texas, Louisiana and California and was one of the last units to deploy to the European theater. Landing in Le Havre, France, in early March 1945, the 97th took up positions on the west bank of the Rhine River opposite Düsseldorf, Germany. It helped to reduce the Ruhr pocket and on 7 May advanced into Czechoslovakia. For service in Europe, it was awarded campaign participation credit for central Europe. Because the division had seen little combat, it returned to the United States in June 1945



for refitting and redeployment to the Pacific theater. In September, the troop arrived along with the division in Japan, where it performed occupation duties until March 1946, when it was inactivated.

When the Army adopted the "Reorganization Objective Army Divisions" (ROAD) concept, the elements of the 97th Mechanized Cavalry Reconnaissance Troop were restored to their pre-World War II designations, withdrawn from the Army Reserve and designated as Regular Army units. Shortly thereafter, Headquarters and Headquarters Company, 194th Infantry Brigade, was converted and redesignated as Headquarters and Headquarters Company, 194th Armored Brigade. It was activated on 21 December, 1962, at Ft. Ord, Calif., to support the Combat Development Command's experimentation program. For that role, the brigade consisted of a tank battalion, a mechanized infantry battalion, a cavalry squadron, engineering and maintenance companies and a light truck transportation platoon.

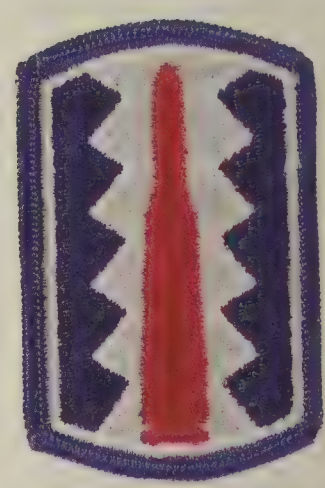
Five years later the brigade was transferred from Ft. Ord to Ft. Knox, Ky., and reorganized to support the Armor School. In the 1970s, the brigade was given a strategic forces mission—to be deployable anywhere in the world on short notice. Elements of the brigade have rotated three times to the National Training Center at Ft. Irwin, Calif., and demonstrated that they can fulfill their role at the Armor School and still be a vital part of the strike force. Along with these missions, each battalion of the brigade supports the training of at least two National Guard or Army Reserve units.

197th Infantry Brigade
Follow Me

The 197th Infantry Brigade was organized in 1921 at Pittsburgh, Pa., in the Organized Reserves as an element of the 99th Division. In early 1942, when the Army eliminated the brigade echelon from the infantry division, Headquarters and Headquarters Company, 197th Infantry Brigade, was converted and redesignated as the 99th Reconnaissance Troop (less the 3rd Platoon), 99th Division. The 3rd Platoon of the troop descended from Headquarters and Headquarters Company, 198th Infantry Brigade. The unit was ordered into active military service on 15 November, 1942, and reorganized at Camp Van Dorn, Miss., as the 99th Cavalry Reconnaissance Troop, an element of the 99th Infantry Division. Before leaving the United States in September 1944, the division participated in the Louisiana maneuvers of 1943 and trained at Camp Maxey, Tex. From the Boston Port of Embarkation, the 99th traveled via England and France to Aubel, Belgium, where it prepared for combat.

The division first saw combat on the Siegfried Line, for which it was cited in the Order of the Day of the Belgian Army. It was caught in the German Ardennes offensive on 16 December, 1944. For action during the Battle of the Bulge, the troop was cited twice in the Order of the Day of the Belgian Army, once with the 99th Infantry Division and once with the 9th Infantry Division. The troop also fought in the central Europe campaign. By V–E Day, the 99th Infantry Division was advancing toward the Austrian border. It remained in Europe as a part of the occupation forces until September 1945 when it returned to the United States and was inactivated at Camp Myles Standish, Mass.

On 1 August, 1962, the unit was lieved from assignment to the 99th fantry Division, withdrawn from the A Reserve, and allotted to the Regular my; concurrently, the troop (less the Platoon) was redesignated as He quarters and Headquarters Comp 197th Infantry Brigade, and the 3rd toon reverted to its prewar designat The following month, the 197th Infa Brigade was activated at Ft. Benn Ga., as school troops for the Infa School. The brigade consisted of t infantry battalions, one armor batta one artillery battalion and chemical engineer companies. To emphasiz role as an elite unit, the 197th ado the nickname "Follow Me," taken



the motto of the Infantry School. A Army expanded for the Vietnam co the brigade provided the cadre fo 199th Infantry Brigade, which dep in 1967. As forces were withdrawn Vietnam, the brigade tested the cepts to be used in adopting a volunteer Army in the early 1970s 21 March, 1973, it was relieved assignment to the Infantry Schoo was reorganized as a strategic f unit. Since then the brigade has s in various roles in the Army's c gency plans.

205th Infantry Brigade

Organized in November 1921 i Organized Reserves at Warren, the 205th Infantry Brigade was a ment of the 103rd Division. Whe sional brigades were eliminated in the headquarters and headquarters panies of the 205th and 206th In Brigades were combined as the Reconnaissance Troop, 103rd Div The unit was ordered into active m service in November 1942 at Camp borne, La., and reorganized as the Cavalry Reconnaissance Troop, a ment of the 103rd Infantry Divis moved to France in October 194 subsequently served in the Rhin Ardennes-Alsace and central E campaigns. After a brief tour in



on duty, the troop returned to the ted States and was inactivated in tember 1945 at Camp Patrick Hen- Va.

eactivated in the Organized Reserves r the Army Reserve) in April 1947 Council Bluffs, Iowa, the unit was signated as the 103rd Mechanized alry Reconnaissance Troop. In 1949, as redesignated as the 103rd Re- naissance Company. When division- econnaissance companies were re- ed by cavalry squadrons in 1959 ng the "pentomic" reorganization he Army, the company was inacti- d. Four years later, when the 103rd ntry Division was eliminated from the y Reserve force structure to meet mobilization requirements, the 103rd onnaissance Company (less the 3rd oon) was converted and redesig- d as Headquarters and Headquar- Company, 205th Infantry Brigade. vated in February 1963 with Head- ters at Ft. Snelling, Minn., the bri- e included former elements of the d Infantry Division.

July 1976, the 205th was reorga- d as a light infantry brigade and re- ed the mission of augmenting forces laska upon mobilization. The 205th been designated to serve as the rve components roundout brigade e Alaska-based 6th Infantry Divi- (Light)—a first for an Army Reserve ade—which will be organized dur- iscal 1986–89. Supported by units innesota, Iowa and Wisconsin, the ade includes an element of the old- infantry regiment in the Regular and Army Reserve, the 3rd Bat- n, 3rd Infantry (The Old Guard), se members wear their colorful co- l uniforms at many ceremonies ghout the midwest.

218th Infantry Brigade

ganized in January 1952 as part of South Carolina Army National Guard ewberry, the 218th Infantry Brigade n as the 131st Antiaircraft Artillery Operations Detachment, with the missions of fire direction, liaison and the collection and dissemination of meteorological and intelligence data. The unit was reorganized and redesignated in August 1952 as Headquarters and Headquarters Battery, 228th Antiaircraft Artillery Group. In 1959, it was converted and redesignated as Headquarters and Headquarters Detachment, 228th Signal Group, but reverted to artillery in April 1963 when it was redesignated as Headquarters and Headquarters Battery, 163rd Artillery Group. The 218th's role as a combined arms brigade began in January 1968 when it was converted from artillery and redesignated as Headquarters and Headquarters Company, 2nd Brigade, 30th Infantry Division. As a divisional brigade, the unit was task force and mission oriented. During this time, the 30th Infantry Division consisted of National Guard units from North Carolina, Georgia and South Carolina.

In January 1974, as part of a restructuring of the National Guard, the 30th Infantry Division was broken up, and the brigade was reorganized and redesignated as Headquarters and Headquarters Company, 218th Infantry Brigade.



As a separate mechanized infantry brigade, the 218th, with its home station at Newberry, has priority status for receipt of new equipment in order to maintain a higher level of unit readiness.

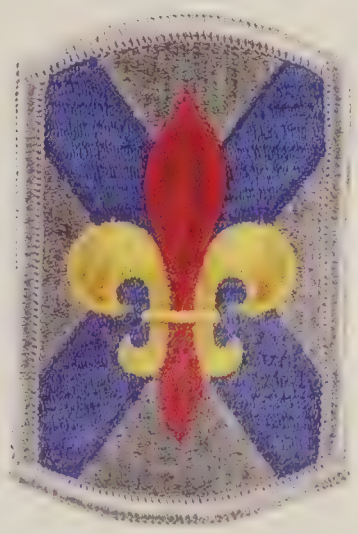
Although the unit has not been called into active federal service, in state service it has provided disaster relief to many South Carolina citizens, most recently in late March 1984 when tornadoes struck the counties of Newberry, Fairfield and Marlboro. As a combined arms unit, it includes elements of the 118th Infantry, the 263rd Armor and the 178th Field Artillery. The 218th continues to enhance its readiness for mobilization through a partnership with the 24th Infantry Division at Ft. Stewart, Ga. This relationship between Regular Army and National Guard components allows for an exchange of ideas and strengthens the training programs of those concerned.

256th Infantry Brigade

Headquarters, 256th Infantry Brigade, dates back to February 1922, when it was organized and federally recognized in the Louisiana National Guard at Lafayette as Company M, 156th Infantry. The 156th Infantry was originally an element of the 39th Division, but in July 1923 the regiment was relieved from its assignment to the 39th and assigned to the 31st Division. The unit was redesignated as Company H, 156th Infantry, in January 1940 and was inducted into federal service with the 31st Division in November 1940.

The 31st Division was training at Camp Blanding, Fla., when the nation entered World War II. The 156th was sent to Ft. Fisher, N.C., to protect that portion of the Atlantic coastline. After the 31st was reorganized as a three-regiment division in 1942, the 156th Infantry was relieved from its divisional assignment and became a separate infantry regiment. Arriving in England in October 1942, the regiment was assigned to guard important military installations. In the summer of 1944, the 156th Infantry moved to the continent. The rapidly advancing allied armies left isolated pockets of Germans throughout France. Elements of the 156th Infantry were given the mission of providing security to the allied logistics network and guarding the flanks of the spearheading divisions. On 15 October, 1944, Company H, together with the rest of the 2nd Battalion, 156th Infantry, was attached to the Supreme Headquarters, Allied Expeditionary Forces, as a security force, a mission that it carried out until the end of the war. The unit served a brief occupation tour before returning to the United States where it was inactivated at Camp Kilmer, N.J., on 13 March, 1946.

Following World War II, the unit was reorganized and federally recognized at Lafayette on 18 December, 1946, as the Service Company, 156th Infantry, an element of the 39th Infantry Division. The company was relieved from assignment to the 39th Infantry Division in July



1959 when it was converted and redesignated as the 3628th Ordnance Company. It was called into active federal service from October 1961 until August 1962 during the Berlin crisis. In December 1967, the unit was consolidated with Headquarters Company, 1st Brigade, 39th Infantry Division, and Company D, 125th Medical Battalion, to form Headquarters and Headquarters Company, 256th Infantry Brigade. The 256th Infantry Brigade, a mechanized infantry unit, is currently the roundout brigade for the 5th Infantry Division, stationed at Ft. Polk, La. In addition to maintaining their readiness for deployment, elements of the brigade stand ready to aid Louisiana citizens during emergencies.

2nd Armored Cavalry
Second Dragoons

The 2nd Armored Cavalry dates from 1836 when the 2nd Regiment of Dragoons was organized in response to the need for additional mounted troops to fight the Seminole Indians in Florida. In March 1843, the regiment was dismounted and reorganized as the Regiment of Riflemen, but it was soon remounted. The 2nd Dragoons fought in 14 campaigns during the Mexican War, highlighted by the daring charge led by Capt. Charles A. May at Resaca de la Palma. From the end of the Mexican War until 1861, the regiment was primarily engaged in constabulary duties: fighting Indians on the western plains; keeping the peace between the pro- and anti-slavery factions in Kansas; and putting down the Mormon revolt in Utah. Returning east upon the outbreak of the Civil War, the 2nd Dragoons was redesignated in August 1861 as the 2nd Cavalry. The regiment earned 14 Civil War streamers, including Peninsula, Antietam and Gettysburg. At the war's end, the 2nd Cavalry returned to the west where it earned additional battle honors fighting such Indian tribes as the Nez Percé, Bannocks and Cheyennes. The regiment also participated in the famous campaign against the Sioux that met with disaster at Little Big Horn.

During the War with Spain, only the 1st Squadron went to Cuba, where it fought in the Santiago campaign. In early 1899, the entire regiment took up pacification duty on the island, and it remained there for three years. Between 1903 and 1912 the 2nd Cavalry served two three-year tours in the Philippines, fighting guerrillas in the aftermath of the insurrection there, as well as Moro tribesmen in the southern islands. Following its second return from the Philippines, the regiment served along the Mexican border, and in December 1913



it moved to Ft. Ethan Allen, Vt.

In 1918, the regiment deployed to France, where it was split up, with its elements performing military police duties and managing remount depots. A provisional squadron formed from Troops B, D, F and H did see some mounted service. The regiment participated in three World War I campaigns. After a period of occupation duty, the 2nd Cavalry returned to the United States in June 1919. The regiment spent the interwar years at Ft. Riley, Kan., where it furnished support to the Cavalry School. With the trend toward mechanization, spurred by the success of the Nazi *blitzkrieg* in 1939, the need for mounted units decreased. Consequently, in July 1942 the 2nd Cavalry was inactivated, and its personnel and equipment were transferred to the newly activated 2nd Armored Regiment.

In January 1943, the regiment was reactivated at Ft. Jackson, S.C., as the 2nd Cavalry, Mechanized. The following December the regiment was broken up, and its elements were reorganized and redesignated as Headquarters and Headquarters Troop, 2nd Cavalry Group, Mechanized, and the 2nd and 42nd Cavalry Reconnaissance Squadrons, Mechanized. These units went overseas in April 1944 and moved to France in July. Entering combat in early August as part of Third Army, the 2nd Cavalry Group participated in the Normandy, northern France, Rhineland, Ardennes-Alsace and central Europe campaigns. In the postwar period, the group performed occupation duty in Germany as the 2nd Constabulary Regiment, which consisted of the 2nd and 42nd Constabulary Squadrons. The regiment was again converted and redesignated in November 1948 as the 2nd Armored Cavalry, but continued its constabulary functions. In January 1951, former elements of the 2nd Armored Regiment were consolidated with the 2nd Armored Cavalry, adding to its flag the battle honors earned by those units in Europe and the Pacific during World War II.

The 2nd Armored Cavalry returned to the United States in the summer of 1955, but went back to Europe three years later as part of "Operation Gyroscop The regiment has been stationed West Germany since 1958, provid support to the NATO forces.

3rd Armored Cavalry
Brave Rifles

The Regiment of Mounted Riflem now known as the 3rd Armored C alry, was organized in October 184 Jefferson Barracks, Mo., to estab stations to protect the route to Oreg Before it could take up that duty, regiment was sent to fight in Mex Praising the regiment after the battl Chapultepec, Lt. Gen. Winfield Scott claimed, "Brave Rifles! Veterans! have been baptized in fire and b and have come out steel."

The regiment returned to Jeffe Barracks in July 1848, and the next it finally began the long march to gon. Two years later, the regiment protecting citizens in Texas and Mexico from hostile Indians. With outbreak of the Civil War, the regi was redesignated in August 1861 as 3rd Cavalry. It participated in the b of Chattanooga and saw service in bama, Arkansas and Tennessee.

In the postwar period the 3rd Ca served 30 years in the west and ea battle streamers for campaigns in Mexico, Oklahoma and Arizona, as as for those against the Comanc



Cheyennes and Utes. It also wa volved in the battle of Little Big During the War with Spain, the reg participated in the storming of San Hill and the capture of Santiago 3rd Cavalry served two tours in the ippines before being sent to Tex 1908, where it served until the out of World War I. The 3rd Cavalry a in France in November 1917, whe elements operated remount depots Troop K saw combat near the e the war. After serving as occu forces, the regiment returned t United States in June 1919, and i ments were stationed at Ft. Eth len, Vt., and Ft. Myer, Va. Beca their proximity to the nation's c

troops at Ft. Myer frequently per-ied ceremonial duties.
hen the United States entered World II, the regiment moved to Georgia was inactivated in July 1942 at Ft. ning. Its personnel and equipment thereupon transferred to the new-tivated 3rd Armored Regiment. The Cavalry was redesignated in Janu-1943 as the 3rd Cavalry, Mecha-d, and activated in March 1943 at p Gordon, Ga. In November 1943, egiment was broken up and its ele-ts reorganized and redesignated as dquarters and Headquarters Troop, Cavalry Group, Mechanized, and the and 43rd Cavalry Reconnaissance adrons, Mechanized. The 3rd Cav-Group went overseas in June 1944 participated in five European cam-ns. Headquarters and Headquarters p, 3rd Cavalry Group, was inacti-d at Camp Kilmer, N.J., in Decem-1945, but the 3rd and 43rd Cavalry nnaissance Squadrons remained e. The 3rd Cavalry Group was even-reassembled at Ft. George G. de, Md., with the group headquar-reactivated there in February 1946. November 1948, the former 3rd lry became the 3rd Armored Cav-which was consolidated in January with elements of the former 3rd red Regiment. Thus, the 3rd Ar-d Cavalry's flag carries streamers senting the Army Presidential Unit on and the Belgian *Croix de Guerre* Palm earned by those units for ac-t Bastogne. During the early 1950s, ved at Ft. Meade and Camp Pick-/a. From 1955 to 1968, the regi-served two tours in West Ger-, the first as part of "Operation scope" from 1955 to 1958, and the nd from 1961 to 1968 in response e Berlin crisis. After four years at ewis, Wash., the 3rd Armored Cav-moved to Ft. Bliss, Tex., in 1972. y, the Brave Rifles maintain readi-for rapid deployment to Europe in ort of NATO.

11th Armored Cavalry

The Blackhorse Regiment

ganized in March 1901 at Ft. Myer, as part of the expansion of the lar Army following the War with , the 11th Cavalry was sent to the pines to help quell the insurrec-here. As a result, the regiment d its first battle streamer for the r campaign in 1902. Returning to nited States in April 1904, the 11th ry was stationed in the midwest headquarters at Ft. Des Moines, In 1906, the regiment (less the 1st dron) was ordered to Cuba to per-form pacification duty, and it arrived in Havana in mid-October. Soon after their return in early 1909, the troopers traveled to Washington, D.C., for the inaugural parade of William Howard Taft. The entire regiment was then reassembled at Ft. Oglethorpe, Ga. With the outbreak of the Mexican Revoluton in 1911, the 11th Cavalry was ordered to Ft. Sam Houston, Tex., but only served there briefly. It then returned to Ft. Oglethorpe where it remained for the next five years, except for a period of service in 1914 in Colorado where it was sent to restore order after a coal strike culminated in



the Ludlow Massacre. In 1916, the regiment was again ordered to Texas following the raid by Pancho Villa on Columbus, N.M., and took part in the punitive expedition into Mexico.

From 1919 to 1940, the 11th Cavalry was stationed at the Presidio of Monterey, Calif., from whence it sent out patrols to the Mexican border. In 1924, the regiment helped extinguish a fire set when lightning struck oil storage tanks at the marine terminal, and several streets in Monterey are named for servicemen who died fighting the fire. The regiment also assisted in the making of two movies, *Troopers Three* in 1929 and *Sergeant Murphy* in 1937. In the summer of 1942, the 11th Cavalry was moved to Ft. Benning, Ga., where it was inactivated in July and its personnel and equipment transferred to the 11th Armored Regiment.

In May 1943, Headquarters and Headquarters Troop, 11th Cavalry, was reactivated at Camp Anza, Calif., as Headquarters and Headquarters Troop, 11th Cavalry Group, Mechanized. After training, the group was sent overseas in September 1944. Serving with Ninth Army, the group crossed the Roer and Rhine rivers and advanced to the Elbe. After V–E Day, the group remained in Europe on occupation duty and was converted and redesignated in May 1946 as the 11th Constabulary Regiment. It was inactivated in November 1948 in Germany.

The regiment returned to the active rolls of the Army in August 1951 at Camp Carson, Colo., and perpetuated, in addition to the 11th Cavalry and the 11th Cavalry Group, the history and honors of the 11th Tank Battalion and the 1st Constabulary Regiment. In 1957, the 11th Armored Cavalry was sent to West Germany where it patrolled the West German-Czech border for seven years. In August 1964, it was posted to Ft. George G. Meade, Md. Two years later the Blackhorse Regiment deployed to Vietnam. The regiment (less the 2nd Squadron) returned to the United States in 1971 with the 2nd Squadron returning in April 1972. While in Vietnam, the regiment earned eleven campaign streamers, two Valorous Unit Awards and three decorations from the government of the Republic of Vietnam. Since 1972, the 11th Armored Cavalry has been deployed in West Germany defending the Fulda Gap, the main invasion route in the Seventh Army area.

107th Armored Cavalry

The 107th Armored Cavalry was initially organized in the Ohio National Guard in 1887 as unattached troops of cavalry at Cincinnati, Hillsboro and Shelby. With the call for volunteers for the War with Spain, those troops formed the 1st Regiment, Ohio Volunteer Cavalry, which was mustered into federal service in May 1898 at Columbus. The regiment did not go overseas and was mustered out of federal service six months later at Cleveland, Columbus and Cincinnati.

In the years before World War I, cavalry forces in Ohio expanded from two troops to a regiment, which was designated as the 1st Cavalry. During that period, elements of the regiment served an eight-month tour on the Mexican border. In May 1917, the regiment was converted, expanded and redesignated as the 2nd and 3rd Ohio Field Artillery. Mustered into federal service in August at Cleveland and Youngstown, these units were redesignated shortly thereafter as the 135th and 136th Field Artillery and assigned to the 37th Division.



The division arrived in France in the summer of 1918, but fought without its assigned artillery. As detached regiments, the 135th and 136th supported the various American and French units in the province of Lorraine. Both regiments were demobilized in April 1919 at Camp Sherman, Ohio.

After World War I, the 135th and 136th Field Artillery were reestablished as a cavalry regiment, which was designated in 1921 as the 107th Cavalry. As the nation prepared for the possibility of war in 1940, the regiment was inducted into federal service and sent to Camp Forrest, Tenn. On 30 March, 1942, while training in California, the 107th was reorganized as a mechanized unit. In January 1944, the regiment was broken up to form Headquarters and Headquarters Company, 107th Cavalry Group, and the 22nd and 107th Cavalry Reconnaissance Squadrons. Only the latter squadron went overseas, serving in three campaigns in the European theater. Group headquarters and the 22nd Cavalry Reconnaissance Squadron were inactivated before the end of the war, and the 107th Cavalry Reconnaissance Squadron was inactivated in November 1945 at Camp Bowie, Tex.

The 107th Armored Cavalry was organized and federally recognized on 15 September, 1949, with Headquarters at Cincinnati. The regiment perpetuated the 107th Cavalry Group, less the 22nd Cavalry Reconnaissance Squadron, which was replaced by the 185th Tank Battalion (organized in 1946–47). Ohio alone supported the 107th until 1968, when the number of armored cavalry regiments in the National Guard was cut from seven to four. At that time, one squadron of the regiment was allotted to the West Virginia Army National Guard, and since then the two states have maintained the regiment. To prepare for possible service as part of an allied force, the 107th has trained with Canada's 48th Highlanders.

116th Armored Cavalry
Snake River Regiment

The 116th Armored Cavalry was constituted in 1920 in the Idaho National Guard as the 1st Idaho Cavalry and organized in the Snake River Valley. It was redesignated in 1921 as the 116th Cavalry (less the 2nd and 3rd Squadrons) and federally recognized in 1922 with Headquarters at Boise. Over the next several years, the 2nd and 3rd Squadrons were added to the Idaho National Guard allotment. From 1921 to 1940, the 116th was assigned to the 58th Cavalry Brigade of the 24th Cavalry Division. After participating in the



Fourth Army maneuvers at Ft. Lewis, Wash., in July 1940, the 116th (less its 3rd Squadron) was dismounted and converted and redesignated in September 1940 as the 183rd Field Artillery. The 183rd was inducted into federal service in April 1941. Two years later, the regiment was broken up and its elements reorganized and redesignated as Headquarters and Headquarters Battery, 183rd Field Artillery Group; the 183rd Field Artillery Battalion; and the 951st Field Artillery Battalion. After training in California, these units served in the European theater and participated in the Normandy, northern France, Rhineland, Ardennes-Alsace and central Europe campaigns. The group and its battalions were inactivated in October 1945 at Camp Myles Standish, Mass.

In January 1947, the units were reorganized and federally recognized as elements of the 183rd Infantry, with Headquarters at Twin Falls, and the 116th Mechanized Cavalry Reconnaissance Squadron at Caldwell. The 183rd Infantry (less the 3rd Battalion) and the 116th Mechanized Cavalry Reconnaissance Squadron were consolidated, reorganized and redesignated in September 1949 as the 116th Armored Cavalry. In 1967, when the number of armored cavalry regiments in the Army National Guard was reduced from seven to four, the 3rd Squadron moved to Nevada and in 1974 to Oregon. In 1977, the 1st Squadron was withdrawn from the Idaho National Guard, and its place in the regiment was filled by the 1st Squadron, 108th Armored Cavalry, from the Mississippi National Guard. In 1979, regimental aviation elements were assigned to the Washington and Wyoming National Guard. As a result of numerous reorganizations, elements of the regiment display World War II campaign streamers for Papua, New Guinea, Luzon, southern Philippines, Tunisia, Naples-Foggia and Rome-Arno. Various elements were also awarded the French *Croix de Guerre* with Silver Star, the Philippine Presidential Unit Citation and Citations in the Order of the Day of the Belgian Army. Headquarters of the 116th is currently at Twin Falls.

On numerous occasions since 19 elements of the 116th have been cal for state service in humanitarian a disaster relief missions, opening s bound roads and delivering food a supplies to isolated ranches, clearing jor train wrecks and breaking up pot tial avalanches in the mountains aro Sun Valley with their howitzers.

163rd Armored Cavalry
First Montana

The 163rd Armored Cavalry was tially organized in the Montana Natio Guard during 1884 and 1887 as the Regiment of Infantry. Mustered into eral service in May 1898 as the Montana Volunteer Infantry Regimen was sent to San Francisco, Calif. Th months later, the First Montana arri at Cavite in the Philippine Islands help put down the insurrection and s sequently participated in the Manila Malolos campaigns. The regiment turned to San Francisco in Septem 1899 and was mustered out of ser the following month. Between 1901 1903, the unit was reorganized and designated as the 2nd Montana In try Regiment. It was called to the co again in June 1916 for duty on the M ican border, where it served from to October. The regiment returne state service in November 1916 but back in federal service five months l



In September 1917, the regiment consolidated with 3rd Battalion, 3r fantry Regiment of the District of lumbia National Guard, and red nated as the 163rd Infantry, an ele of the 41st Division. Along with the sion, the 163rd deployed to Fran the beginning of 1918 and was re nized to process replacements fo American Expeditionary Forces. For in France, the unit earned a World I service streamer. In 1919, the ment returned to the United State was demobilized at Camp Dix, N

Former Montana elements of the 163rd ntry were reorganized immediately er World War I as the 2nd Infantry, n Headquarters at Helena. With its rld War I designation restored, the 3rd was assigned in May 1922 to the st Division, later redesignated as the st Infantry Division. As an element of of the first divisions to be called for rld War II, the regiment was stationed Camp Murray, Wash. Deploying to Pacific theater in 1942, the 163rd ght in the Papua, New Guinea, Lu- and southern Philippines campaigns participated in two assault landings. regiment was also awarded the Ar- Presidential Unit Citation and the lippine Presidential Unit Citation. At end of World War II, the 163rd moved Japan for occupation duty and was tivated there in December 1945. elieved from assignment to the 41st ntry Division, the 163rd was reorga- d and federally recognized in 1947 part of a regimental combat team Headquarters at Bozeman. Two s later, it was converted and redes- ted as the 163rd Armored Cavalry. tana alone supported the regiment the National Guard was reorga- d in 1967–68, and the number of ored cavalry regiments was reduced seven to four. As a result, the reg- tal headquarters and two squadrons ained in Montana, while one squad- was allotted to Oregon. The Ore- squadron has subsequently been ted in turn to Nevada and Texas. er the active Army-reserve compo- s partnership program, the 163rd ored Cavalry is tied to the 3rd Ar- d Cavalry at Ft. Bliss, Tex., for as- nce in training.

278th Armored Cavalry
Three Rivers Regiment

e 278th Armored Cavalry, the new- uch unit in the Army National Guard, organized and federally recognized May, 1977, with Headquarters at ville, Tenn. The regiment's nick- refers to its recruiting area around Tennessee, Holston and French d rivers. Since the regiment was ed from existing Tennessee Guard , some of its elements served in World Wars. Headquarters Troop Howitzer Battery, 1st Squadron, has three World War I and five d War II campaign participation s. Headquarters Troop, 1st Squad- and Troops A and F each also dis- two Army Presidential Unit Cita- on its guidon, earned as elements 117th Infantry. The first is for the of Mortain in August 1944, when 17th helped to blunt the German attempt to split the allied forces and drive them into the sea at Avranches. The second commemorates the regiment's assault through the Siegfried Line at Scherpenseel, Germany.

In state service, the 278th contributes to Tennessee's emergency resources, and in its federal role it serves as a corps unit. The regiment participates in the active Army-reserve components partnership program, which pairs it with the 24th Infantry Division for training.

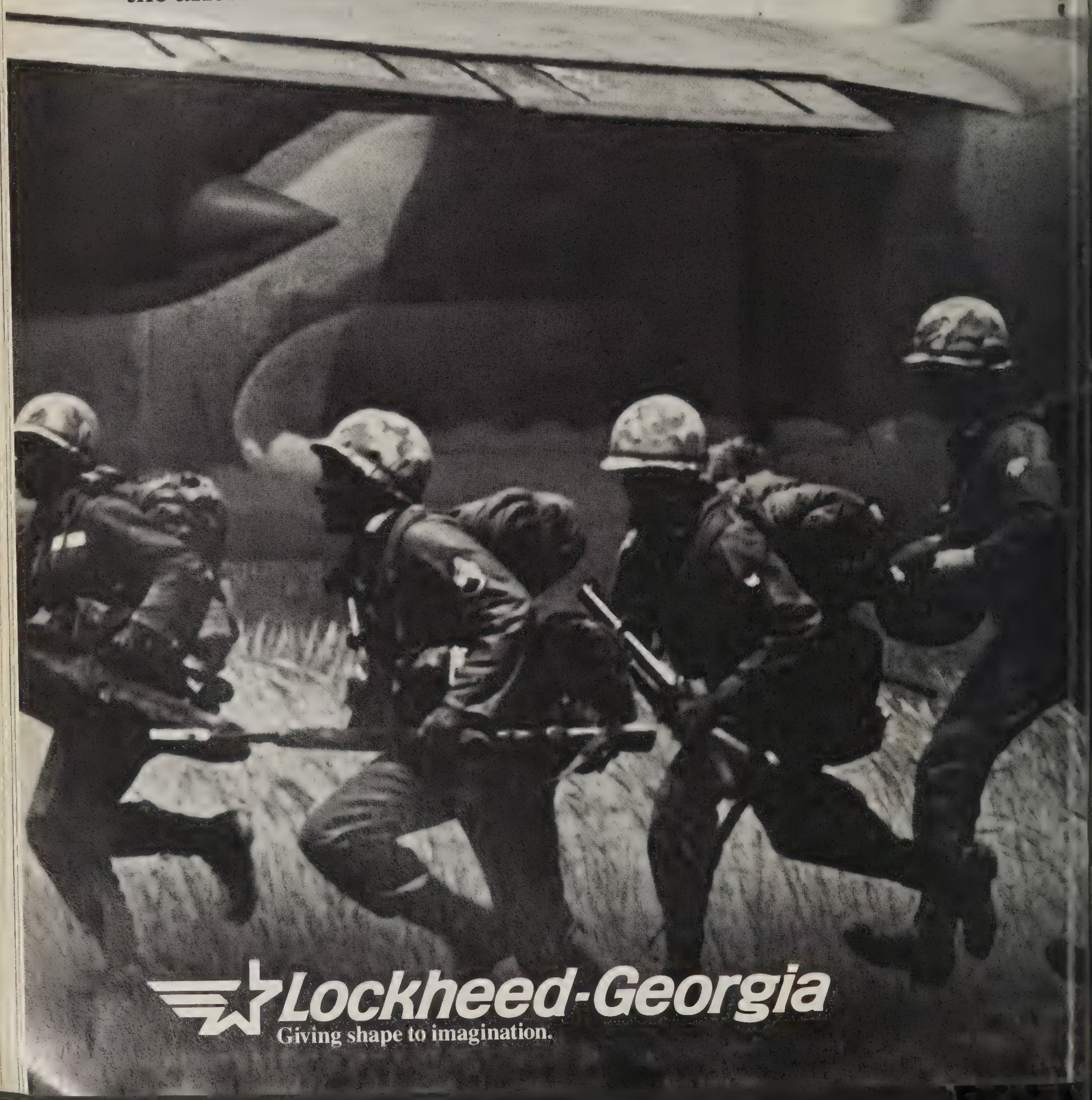


Innovation

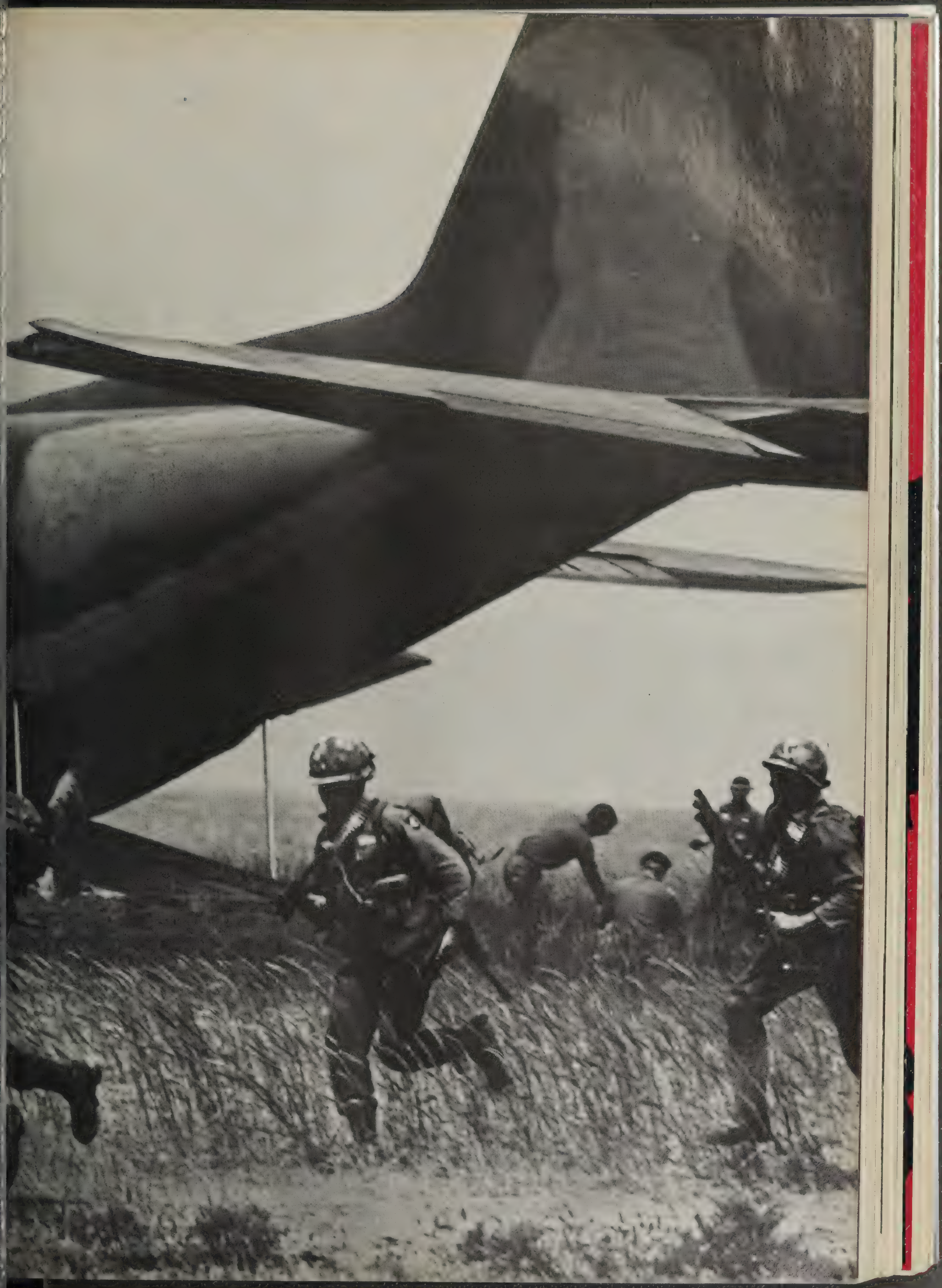
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U.S. Army Weaponry an

The following catalog of Army weapons and equipment is the exclusive product of the Army Materiel Command (AMC) and its subordinate elements. The directory is arranged according to the responsibilities of the subordinate commands, whose headings appear in alphabetical order; each system or item of equipment is discussed under the heading of the AMC subordinate command mainly responsible for that item.

It should be noted that AMC is not primarily responsible for the Army's research and development efforts in the area of strategic defense; these activities are conducted by the Army Strategic Defense Command and its subordinate elements. A description of the Army's contributions to the national "strategic defense initiative" (SDI) will be found in the article by Maj. Gen. Eugene Fox, the ballistic missile defense program manager, elsewhere in this issue.

The individual entries in the directory were produced by the public affairs offices of the AMC subordinate commands concerned, under the direction of the office of the chief of public affairs at AMC headquarters, Alexandria, Va.

Army Material Command (AM

AMC is among 15 major Army
mands and one of the five with a
star commander.

AMC exists to support the soldier
the Total Army. The command also
ports the other armed services and, thr
the security assistance program, alli
the United States.

AMC does all the research, dev
ment and acquisition of the Army's
teriel and maintains the continuous
ness of materiel in the hands of so
and in the Army's war reserve stock
operational project stocks. The com
also serves as the Army executive
for security assistance or foreign mi
sales; the DoD (Department of De
single manager for conventional am
tion; the Army executive directo
test, measurement and diagnostic e
ment; and as the DoD lead agenc

Equipment in Mid-1980s

mical, biological and radiological de-
e materiel development programs.
MC's personnel composition is about
percent civilian and 8 percent uni-
ned, for a total assigned strength of
e than 128,000. The command's fis-
1985 budget was about $30 billion,
amount equal to about 62 percent of
Army total when military pay and
struction appropriations are excluded.
MC owns 64 installations and 26 sub-
allations, covering some 4.4 million
s of land, and has personnel stationed
107 other locations throughout the
ld. The command manages a total Army materiel inventory comprising more than 384 different stock-numbered line items of equipment worth about $84 billion.

If AMC were included in *Fortune* magazine's list of the top 500 industrial firms, it would rank number 8 in terms of sales, assets and people.

A compendium of weapons and equipment, as compiled by the Army Materiel Command, together with descriptions of AMC's subordinate commands, their missions and activities.

Army Armament, Munitions and Chemical Command (AMCCOM)

Headquarters, AMCCOM, is located at Rock Island, Ill., and is a nationwide organization with 47 subordinate centers, arsenals and ammunition plants and activities scattered throughout the country. The command numbers more than 42,000 soldiers, federal civilian workers and contractor employees.

AMCCOM is responsible for the Army's "guns and bullets." Weapons managed by the command include towed and self-propelled artillery, mortars, recoilless rifles, rocket launchers, aircraft armament and tank armament. Other categories are fire control equipment, chemical weapons and chemical defensive equipment, pyrotechnics, non-nuclear missile warheads, common tools and special tools, and explosive ordnance special tools.

As the "crossroads of the armament community," the command also serves as the Defense Department's single manager for procurement, production, supply, maintenance and transportation of conventional ammunition for all of the armed services.

* * *

■ **9-mm Pistol.** In early January of this year, it was announced that the Beretta U.S.A. Corporation of Accokeek, Md., won the competition to produce a new 9-mm military sidearm to replace the .45-caliber pistol throughout the Department of Defense. Military services can expect to be issued the pistol in 1986.

The Army, which has been using the .45-caliber pistol since 1911, made its last major purchase in 1945. Since many of the nearly 400,000 existing Colts are nearing the end of their service life, maintenance has been a major problem.

The winner is a 9-mm semiautomatic double-action pistol with a magazine capacity of 15 rounds. It is built with an aluminum alloy frame and a steel slide, which makes it lighter in weight than the .45 pistol. The weapon is 8.54 inches long and 5.51 inches high and weighs slightly over 2.5 pounds (40.89 ounces) when fully loaded. The weapon can be quickly field-stripped into four parts for ease of cleaning and maintenance.

One of the pistol's main features is its improved safety over the Colt .45. The firing pin is locked in place prior to firing. A special decocking device will safely lower the hammer with a flick of the thumb without the firing pin being hit. The pistol can also be used effectively by either right- or left-handed shooters.

The need for a new standard handgun was underscored by a 1978 House Appropriations Committee survey that showed there were more than 25 different types of handguns and 100 stock numbers of ammunition among the services.

To select a new pistol for the joint services that would be compatible with NATO weapons, AMCCOM conducted extensive testing in 1984. The decision to choose the Beretta pistol was based on thorough testing and evaluation of eight weapons that were submitted by both American and foreign manufacturers.

Testing took place at three separate locations, each testing a different aspect. The Combat System Test Activity, located at Aberdeen Proving Ground, Md., performed environmental testing. Engineering and technical evaluations were made of the weapon's performance under adverse conditions such as mud, sand and water. Various degrees of lubrication were also tested, as was the pistol's performance under extreme heat and cold.

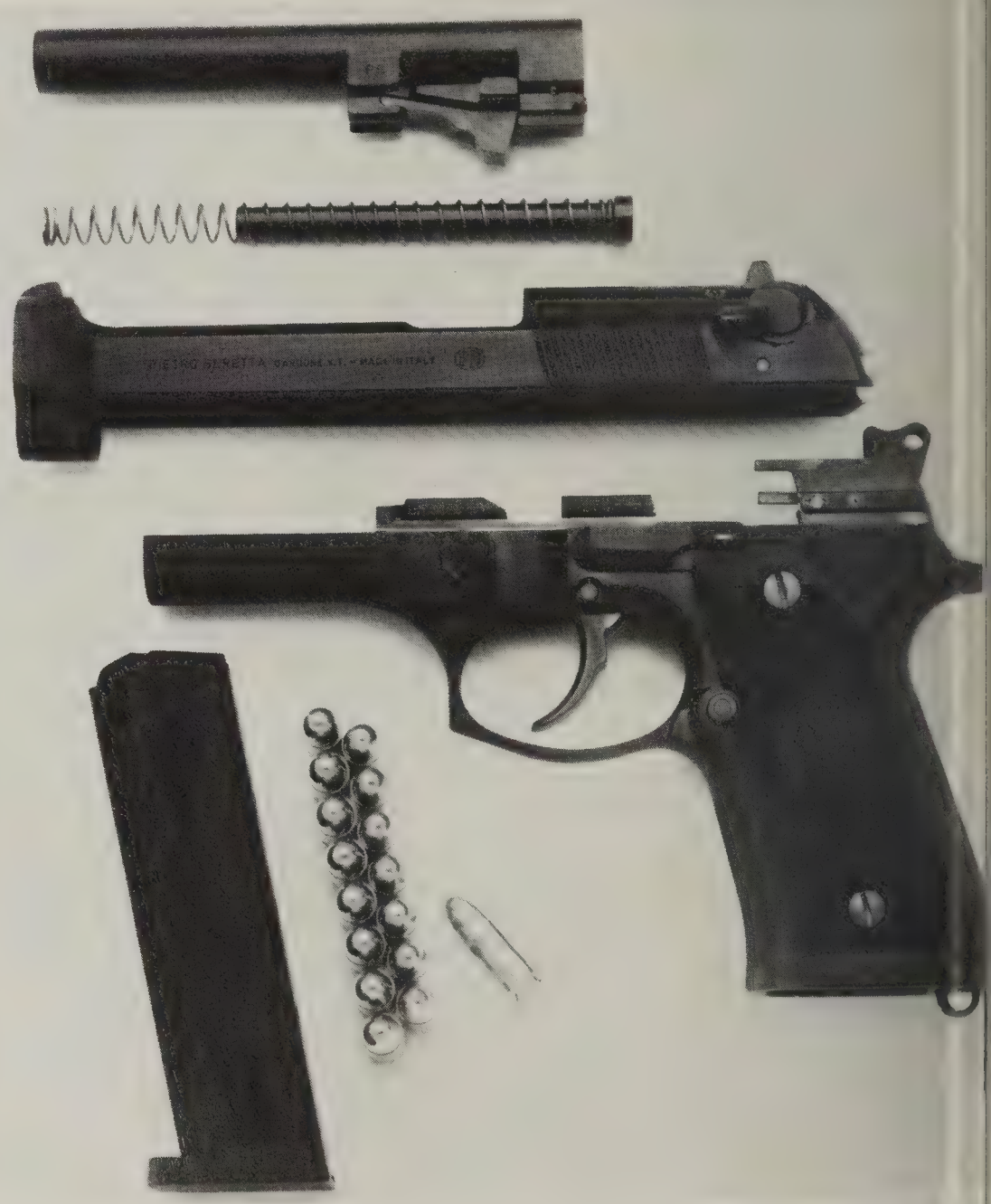
A 35,000 round test to determine reliability and durability was conducted at Ft. Dix, N.J.

At the third test site, Ft. Benning, Ga., the Infantry Board used military members, both male and female, of various marksmanship capabilities from all services. The purpose of this exercise was t test human factors and to determine t hit probability of each pistol candida e the hands of troops. This test includ sequences in which participants wore v ious items of protective clothing, such gas masks and cold-weather gloves.

Following the conclusion of the tests October 1984, and a joint services eva ation of the results, combined with jo service advisory council review of evaluation, the Beretta was selected. selection was based on six factors: c logistics, technical suitability, quality surance, production and managemen

A five-year fixed-price contract 315,930 weapons was awarded in A 1985. The multiyear contract will all the initial quantity to be produced in It The second year will be a transitio period, with the assembly and testing ing done in the United States. By third year, the barrel, slide and frame to be manufactured in the United St and by the fourth year the entire pi will be manufactured here.

The Beretta pistol met or exceeded mandatory requirements and has the l est overall cost. Its durability also



The Beretta 92SB-F 9-mm semiautomatic pistol—seen here field-stripped into its co ponent parts—was chosen this year as the new standard military sidearm.

s potential savings over the life of weapon.

nder the integrated logistics support ram, more than 6,500 Army units receive the total pistol procurement age, plus full repair parts support. ne adoption of this standard hand- and ammunition will provide U.S. os compatibility with NATO allies result in savings and efficiencies due etter reliability and performance.

M16-Series 5.56-mm Rifles. Congress opriated $36.6 million to begin buy- he improved M16A2 rifle in fiscal , with an initial increment of 75,000 s. Modifications from the M16A1 in- e elimination of the full-automatic re in favor of a three-round burst bility, and a new barrel optimized ccuracy with the longer, heavier bul- f the new NATO standard 5.56-mm d.

ie Joint Sevices Small Arms Program AP) was asked by the House Armed ces Committee to assess the M16 st current requirements, detail planned dies for any deficiencies and rank the s and costs of potential replacements, y. The essence of the JSSAP report, red in March 1981, was to stick with roduct-improved M16, while accele- g work on promising technologies might yield a replacement.

consistent complaint about the M16A1 ts ammunition had been the relative of effectiveness at ranges over 300 rs.

is point has been reinforced now the rapid-deployment force has be- a major defense issue, with its em- s on the Middle East and prepara- for desert warfare.

e requirements for longer range have met by rebarrelling to utilize more ively the new NATO 5.56-mm am- tion, originally developed by the an firm of Fabrique Nationale Her- S.A. (FN) for its "Minimi" squad natic weapon (SAW), which has been ed by the Army as the M249.

e longer, heavier bullets of these ds (61.7 grains for the SS109/U.S. ball, 63.8 grains for the L110/U.S. M856 tracer) are fully stablized by the new M16A2 barrel, which is rifled with a twist of one turn in seven inches.

The new bullets shed velocity less quickly (an acknowledged deficiency of the M193 round for the M16A1), so that they will penetrate the U.S. steel helmet out to 1,300 meters, and the German helmet to 1,150 meters, the latter 2⅓ times the achievement of the 55-grain M193 and 44 percent better than the full-caliber 7.62-mm NATO ammunition.

Together with improved adjustable sights, the new barrel improves the accurate lethal range of the rifle to about 800 meters, compared to 460 meters with the current M193 round.

The new barrel is heavier, with a thicker profile, which accounts for most of the increase in weight in the M16A2—8.15 pounds with sling and empty 30-round magazine, compared to 7.9 pounds for the M16A1.

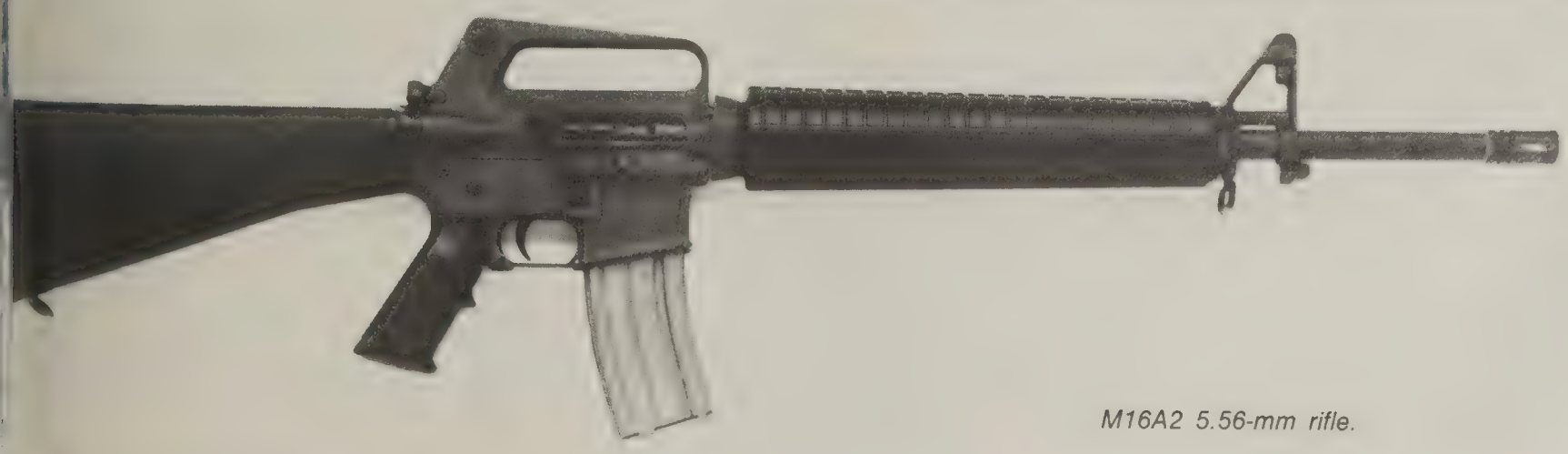
Other major changes in the M16A2 include:

- The three-round burst device, which is intended to cut down on the ammunition wastage from the full-automatic option on the M16A1 and improve overall accuracy of fire by small infantry units. To achieve the limit of three rounds for each pull of the trigger in automatic fire, a disconnector has been added to the lockwork, automatically retaining the hammer after three rounds have been fired. Like several other features of the M16A2, the idea is not a new one, having been extensively tested in the 1970s.
- A new rear sight with a windage knob that can be grasped by the fingers and a horizontal disc-type elevation wheel, adjustable from 300 to 800 meters, that serves as a base for the enlarged flip-up peep aperture used at shorter ranges. The sight adjustments on the M16A1 require a bullet point or other sharp tool to manipulate them.
- A square-edged front sight post in place of the current rounded one, giving better definition against the target.
- The buttstock is five-eighths of an inch longer and made of foam-filled high-impact plastic instead of foam-filled fiberglass. This is expected to cut down on the breakage problems previously experienced, and the stock has an internal reinforcing rib for added stiffness. A redesigned pistol grip is made of the same material.
- A new handguard, also made of high-impact plastic, of circular cross-section, resembling a lengthened version of the one on the CAR-15 Commando submachine-gun model of the M16.
- The flash suppressor has been made to double as a muzzle compensator by eliminating the lowest of the six longitudinal slots, so that the expelled gasses tend to retard muzzle climb in burst fire. The modification also has the advantage of eliminating the direct downward rush of gas that can kick up dust to reveal the position of a prone rifleman.
- A wedge-shaped projection has been added at the rear of the ejection port to deflect hot brass away from the face of a left-handed shooter.

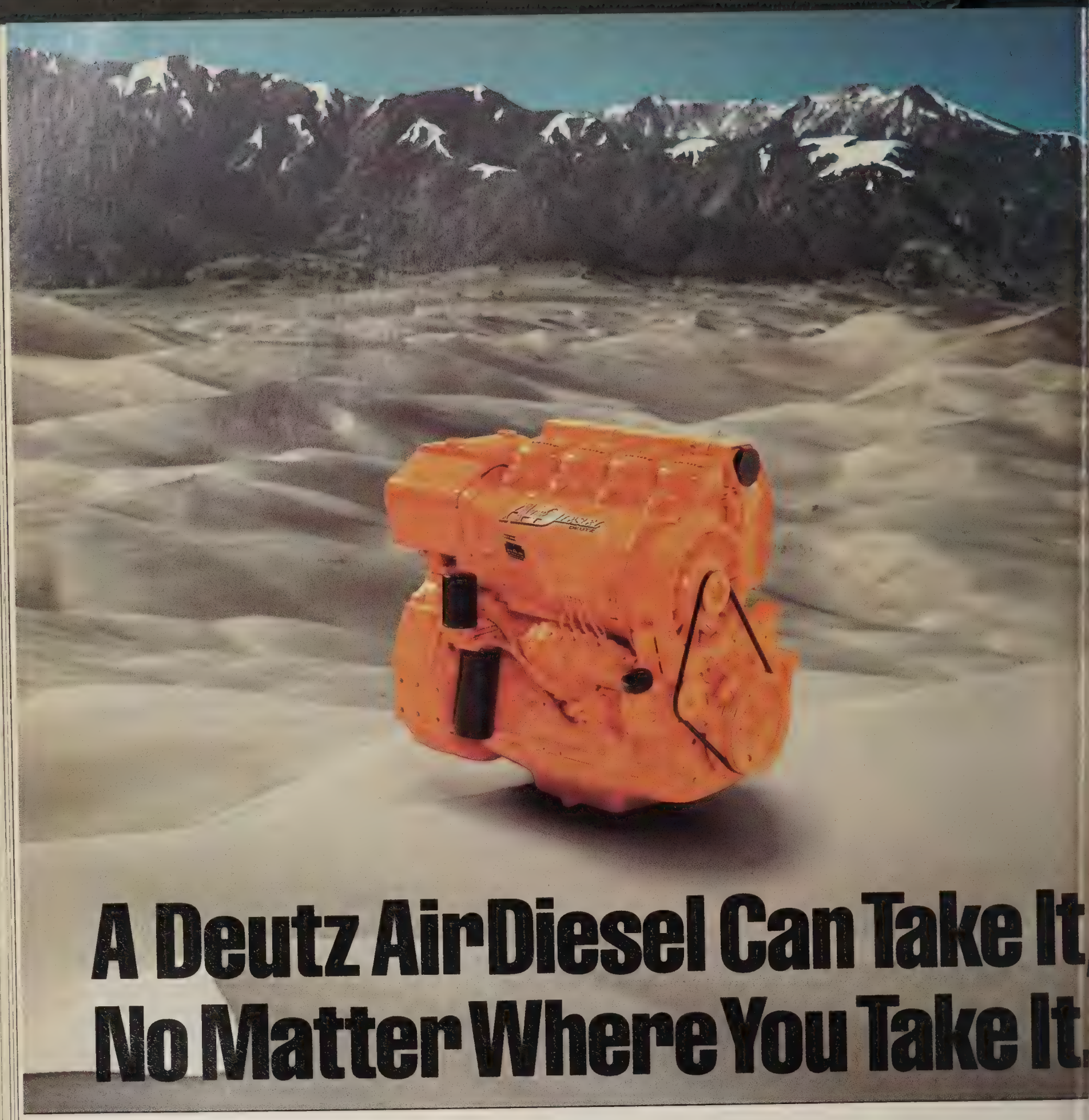
Colt Industries is the manufacturer. The M16A1 has also been made by Harrington and Richardson and the Hydramatic Division of General Motors Corporation.

The M16A2 has also been adopted by Canada, which will build 79,935 of the rifles under license, but with full-automatic capability in place of the burst-control option. Thus, Canada becomes the first NATO nation to drop the alliance's 7.62-mm cartridge, under the 1980 agreement that endorsed the 5.56-mm round as a "second" standard. The United Kingdom is expected to make the same move in the near future.

- **Advanced Combat Rifle (ACR).** This program actually has near- and far-term components, but interest is centering on the near-term caseless ammunition rifle system for which the Army issued two 25-month competitive exploratory development contracts in September 1982—$3.3 million to AAI Corporation and $3.8 million to the U.S. subsidiary of the West German firm of Heckler & Koch. Both contractors are building technology demonstrators for functioning tests, and five finished prototypes are to be deliv-



M16A2 5.56-mm rifle.



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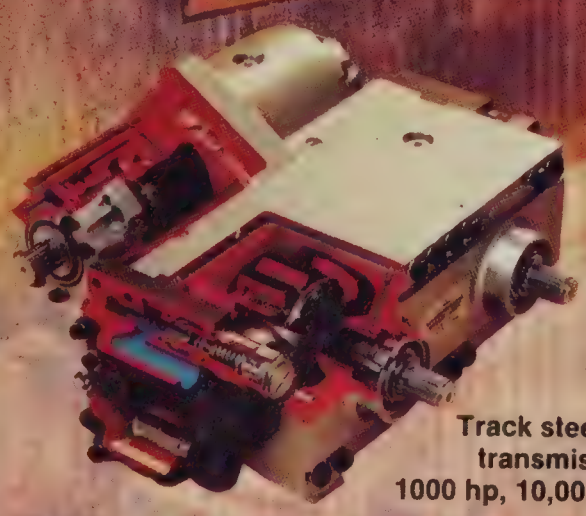
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ered during 1986 for a concept feasibility demonstration.

While savings in weight and volume of ammunition and conservation of strategic materials like copper are some of the advantages claimed for caseless cartridges, what particularly interests the Army is the possibility of increasing hit probability through the controlled dispersion of projectiles in burst fire. The great attraction of such a system for individual weapons is that it tends to minimize the importance of marksmanship skills, which are difficult and costly to teach and retain.

The three-round, burst-fire feature adopted for the M16A2 helps to conserve ammunition by eliminating the option for uncontrolled automatic fire. The bullets cannot be patterned on the target, however, since the shooter's reaction to the noise and recoil introduces wide variations in dispersion. The Army has been experimenting with multiple-bullet and controlled-burst ammunition since the early 1950s, with much of the work having been done by AAI Corporation, one of the development contractors. Later efforts concentrated on slim, low-drag subcaliber fléchettes pushed down the bore by segmented plastic sabots, not unlike those used with the long-rod penetrators of high-velocity tank gun ammunition.

The accuracy and consistency of fléchette dispersion patterns has been improved by the segmented sabots and the use of slow-twist rifled barrels (earlier models had smoothbore barrels).

This is where the weapon-design possibilities of caseless ammunition technology come in. Heckler & Koch determined that the rifle action must cycle at a minimum of 2,000 rounds per minute if the shooter's reactions are not to disturb the dispersion pattern of a three-round burst.

In the Heckler & Koch ACR based on their G11 rifle, the normal rate of full-automatic fire is 600 rounds per minute, but this is stepped up to beyond 2,000 rounds per minute in burst fire, so that all three shots leave the muzzle before the recoiling mass has reached the buffer at the rear of the receiver. The three-round, burst-fire cycle takes about 90 milliseconds, compared with 100 milliseconds for a single round in normal full-automatic fire.

A slam-bang conventional action could soon fall apart at the higher rate, but the short mechanical distances and low stresses in the Heckler & Koch ACR translate into acceptable durability. The main (and one of the few) moving parts in the futuristic-looking Heckler & Koch ACR is a transverse cylinder which carries the chamber and, actuated by a powerful spring, rotates within the breechblock. As the cylinder rotates 90 degrees to the r near the end of the cycle, the breech presented to the next cartridge in l (bullet point down) from the 50-rou magazine, which is mounted atop a parallel to the barrel.

As the recoiling mass—which inclu not only the barrel and breechblock the magazine, firing-pin assembly a three-round burst device—is returned battery by the recoil spring alongside barrel, the cylinder rotates to bring chamber in line with the bore. In burst mode, the first shot is fired by trigger sear, but the second and third simply loaded and fired as quickly as mechanism allows.

Since there is no ejection port unco ing a racing bolt, as in a conventic action, the Heckler & Koch ACR is better sealed against dust and dirt, this is one of the principal advanta claimed for caseless technology. The H ler & Koch ACR's smooth outer casin breached only by the muzzle, the trig (whose slot is sealed by a rubber bu ing), the end of the magazine housing a normally closed opening below the tating cylinder, through which misf rounds are ejected.

The Heckler & Koch ACR would be a practical design, of course, we not for the apparent success of the

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nan Firm Dynamit Nobel in solving
: of the problems that have always
rated the caseless ammunition idea.
4.9-mm (about .19-caliber) round
Octagon, a high explosive treated to
as a propellant, and this has evi-
ly licked the problem of "cook off"—
ıature ignition in a hot chamber where
is no metal cartridge case to serve
heat sink. Cook off, while not elim-
d, has been reduced to what the Ger-
developers consider acceptable lev-
so that the 80- to 100-round bursts
be fired without difficulty.
e use of a completely combustible
er—a pellet of a chemical compound
fferent sensitivity inserted in the base
ıe propellant cake—has eliminated
hamber residue problems of the thin
ɔrimers in earlier designs. The boat-
d 4.9-mm bullet weighs about 52.5
ıs and is about 21 millimeters long,
ase rigidly embedded in a solid block
opellant with a square cross-section,
ıat the overall length of the loaded
d is 32 millimeters. Muzzle velocity
ɔut 3,050 feet per second. The square
e saves considerable space in carry-
nd handling, and bulk weight is es-
ed at 50 percent less than a conven-
l round of similar caliber and per-
ance.
ıother question about caseless ammu-
ı is its ability to withstand rough
ling, as well as its sensitivity to at-
heric conditions. In other words,
happens to these rounds when an
tryman carrying a 70-pound pack
over on them? A related question is
/ in storage and handling, as there is
artridge case to protect against fire.
entional ammunition can withstand
ɔd deal of heat, but caseless propon-
argue that, at most, there will be a
, intense fire, not the flying bullets
ase fragments of exploding conven-
l ammunition.
e Army, for its part, will be looking
carefully at these matters, in light
earlier unhappy experiences with
ustible-case ammunition in large cal-
West Germany, on the other hand,
ıo insuperable difficulties in this area
xpects to put a caseless-ammunition
n service before the end of the next
le.
e AAI Corporation development in-
rates the same concept of controlled
rsion in bursts through extremely
ates of fire. The AAI rifle uses 5.56-
caseless ammunition developed by
ıles Inc., and a reciprocating bolt
ı.
ckler & Koch and Dynamit Nobel
been working on caseless technology
1967. For the ACR competition,
ıave formed a joint company: GHGS
llschaft für Hülsenlose Gewehrsys-
—Caseless Rifle System Company)

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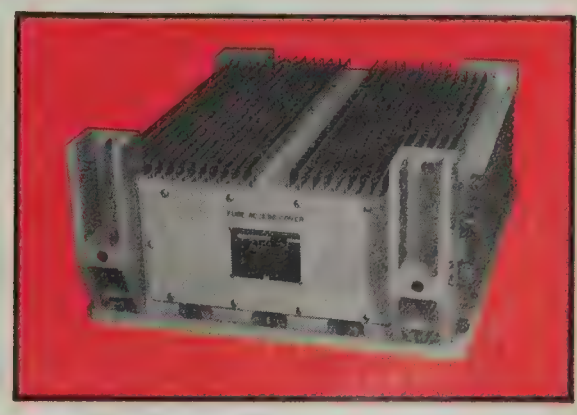
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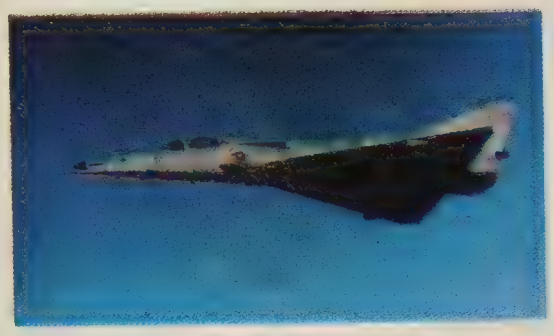
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GmbH. In addition, there has been a recent effort to find alternative approaches to the ACR program. Industry has been invited to submit their concepts. These concepts, as well as the caseless salvo approaches, will be evaluated in fiscal 1987 field demonstration tests.

The far-term component of the program seeks a much more fundamental breakthrough, almost certainly based on electronic technologies, that would place an all-seeing, far-ranging weapon in the hands of the individual infantryman, affording him a one-shot, one-kill hit probability against hidden targets as well as those in the line of sight. It seems likely that further advances in microelectronics might make possible for rifles the kind of precise guidance now being applied to crew-served weapons.

■ **M60 7.62-mm General-Purpose Machine Gun.** The gas-operated M60 began to replace the BAR (Browning automatic rifle) and the Browning light and heavy .30-caliber machine guns in 1959–60. It has since become universal in U.S. service, the M60C being a remotely fired version for external helicopter mounts and the M60D, with spade grips, for aircraft or vehicle pintle mounts.

Weighing 23 pounds empty, the M60 is fed from 100-round disintegrating-link belts and can be fired from hip, shoulder, bipod or from the 15-pound M122 tripod mount. Overall length is 43.5 inches and barrel length is 22 inches, not including the flash hider. The M60 was the first machine gun in U.S. service with a quick-detachable barrel. In the improved M60E3, which has been adopted by the Marine Corps, the gas cylinder and bipod are permanently attached to the receiver, thus supporting it while the barrel is being changed. The E3 has a vertical foregrip and is about five pounds lighter than the standard model.

A positive delay in the unlocking of the bolt after firing is a good safety feature and contributes to reliability by isolating the receiver from firing loads.

The cyclical rate of fire is 550 rounds per minute. The recommended tactical rate is 200 rounds per minute and this can be sustained without cook off of chambered rounds.

The Saco Defense Systems Division of Maremont Corporation has produced the M60 since its introduction.

■ **Close-Assault Weapon Systems (CAWS).** This JSSAP program to produce a more powerful, reliable and versatile successor to the combat shotgun entered advanced development in 1983, with contracts for prototypes awarded by the Naval Weapons Support Center at Crane, Ind. The prototypes and test lots of ammunition have been delivered. The Army is fully involved in the program, its interests being handled by AMCCOM.

Although an improved 12-gauge shotshell would be the primary round, a family of ammunition of such wide variety is being contemplated that it is probably not proper to refer to the CAWS as a shotgun. Shotguns have often been used in combat by U.S. forces—most notably in World War I trench fighting and in close-quarters patrol and ambush work in Vietnam—but the weapons have always been hastily procured and modified sporting guns.

Such weapons have proved unable to stand the rigors of combat, for which they were not designed, lack magazine capacity and are slow to reload. Also, the traditional buckshot shell has limited the shotgun's effectiveness to very short ranges—on the order of 25 to 40 meters.

Development of the family of ammunition around which the CAWS is being designed is concentrating on an improved shotshell of greater lethality and area



M60 7.62-mm general-purpose machine gun on the M122 tripod mount.

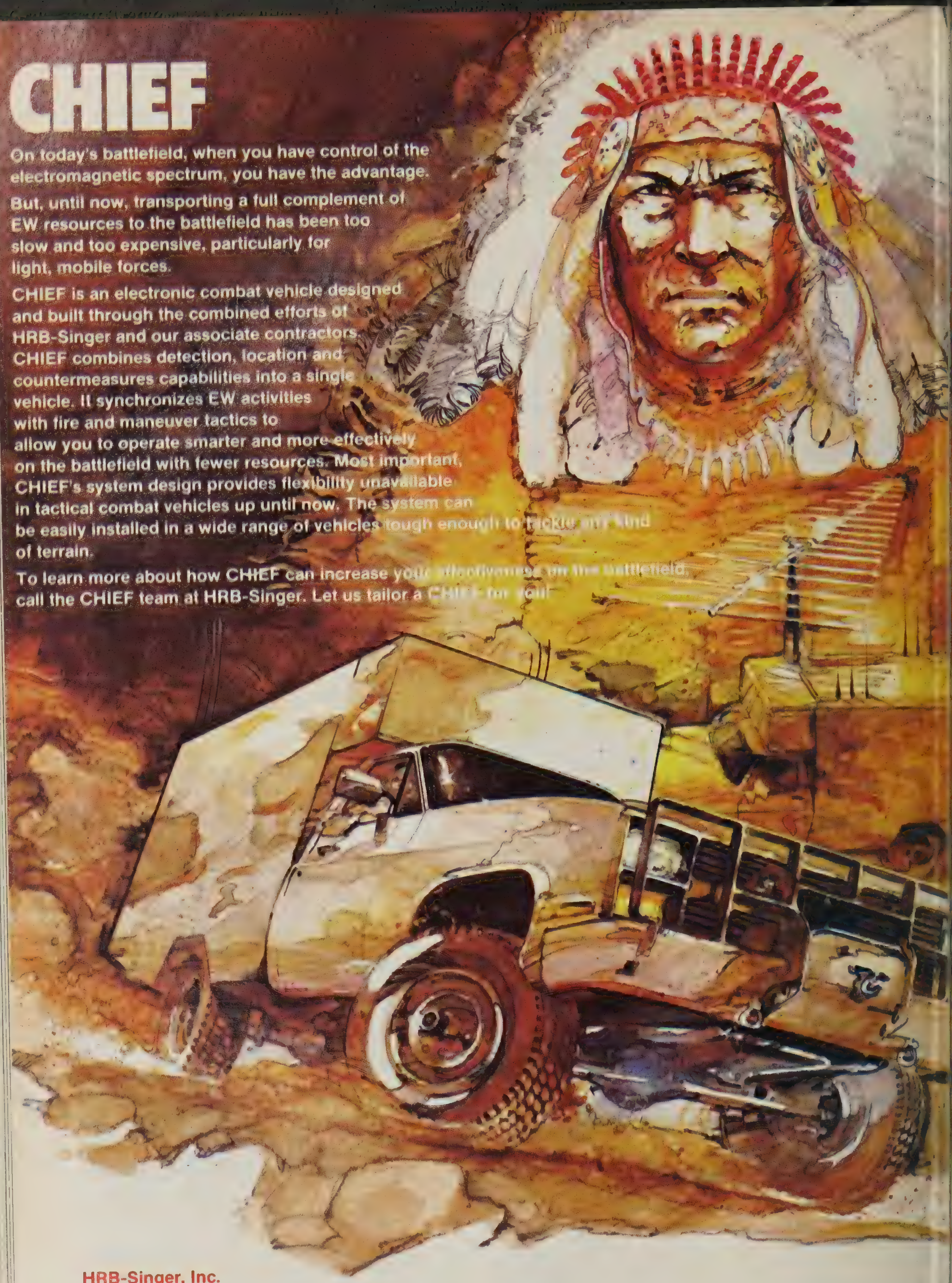
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erage which would be effective against onnel at ranges out to 150 meters, g both buckshot and finned fléchette nds.

lthough not a part of the ongoing ract effort, other ammunition develents could include a fragmentation nd, a tactical tear gas cartridge and antimateriel round that could pene- at least 1¼ inches of armor—and aps as much as 3 inches—at the same e. Also possible are nonlethal disabling control rounds; point-target rounds; armor shaped charges or high-explo- plastic; white phosphorous or ther- rounds; flares, star clusters and ke signals; and line-throwing charges.

the development of its CAWS pro- pe, AAI Corporation has capitalized he work the firm did a decade ago he conceptually similar Tricap (triple bility) 20-mm multipurpose assault on under the auspices of the De- Advanced Research Projects Agency RPA). The new weapon resembles Tricap prototype, of which two were and tested, slightly scaled down (the auge bore is .725 caliber, or about mm). The Tricap test program fired t 400 rounds of ammunition of three s—an antiarmor penetrator, a high- sive round and a four-tube scatter d. What is being investigated now is a multifléchette round for both the antipersonnel and antimateriel roles.

The Olin/Heckler & Koch CAWS candidate is designed around ammunition developed by the Winchester Group of Olin Corporation which features a brass three-inch shotshell with a heavy belted head. Experimental ammunition delivered this year includes both a shell loaded with tungsten alloy pellets (no. 2 buckshot size) for increased long-range penetration and another with eight 70-grain lead balls (000 buckshot) at a muzzle velocity of about 1,600 feet per second—20 percent higher than that in commercial buckshot rounds.

Retained energy at 150 meters is about 60 percent greater in the Olin buckshot load, as compared to the current standard military M162 12-gauge round—enough to penetrate ballistic helmets and vests at that range, as well as a ¾-inch pine board fronted by brush.

The Olin/Heckler & Koch CAWS candidate somewhat resembles the Heckler & Koch G11 caseless ammunition rifle, with the pistol grip and trigger lockwork under the balance point of the weapon and the receiver behind it, in the buttstock, with a detachable ten-round box magazine feeding from beneath. The weapon is recoil operated, firing from a closed bolt, and can be fired semi- or fully automatically. The automatic rate of fire is 220 rounds per minute.

The Olin/Heckler & Koch CAWS weapon is just 29.5 inches long, with an 18-inch barrel, and weighs 8.8 pounds empty and 10.9 pounds with a loaded magazine. Operating parts are of steel, with plastic fore-end, pistol grip and cheekpiece. The cheekpiece, which carries the ejection port and its cover, can be placed on either side of the buttstock, allowing either right- or left-handed firing, a program requirement.

The "technology demonstration," which the prototypes will support, would be the basis for any further refined requirements and a full-scale system development. Olin and Heckler & Koch believe their candidate would cost $450–$550 a copy in production.

■ **105-mm Tank Gun Enhancement Program.** This program was initiated to respond to a new threat assessment of the latest Soviet tanks and to retain the substantial investment made to date in the U.S. fleet of 105-mm gun-armed tanks.

The two major components of the 105-mm improvement program—aimed at achieving much higher muzzle velocities—involve ammunition with higher energy propellants and a longer gun tube. The 17.5-foot-long tube of the standard M68 gun will be lengthened by three to five

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, allowing the peak riding pressure to on the projectile for a longer period ime. The new ammunition, designated 900E1, will expand on the technolo- incorporated in the presently fielded 33, APFSDS (armor-piercing, fin-sta- zed, discarding-sabot) kinetic-energy nd. Improvement in propellant, sabot projectile will result in improved per- nance when fired from the longer tube. he 105-mm gun improvement program xpected to remain in development ugh fiscal 1988. Despite the scheduled earance of the first M1A1 tanks with larger 120-mm gun this year, more n 75 percent of all U.S. main battle s will be armed with 105-mm guns he 1990s. Retrofitting the U.S. fleet improved guns is expected to cost ut $368 million.

M102 105-mm Towed Howitzer. Stan- lized in 1965 and introduced into ser- a year later, the M102 replaced the M101A1 in the air-portable divisions re 105-mm towed guns are still found. vever, the M102 will also equip the light infantry divisions, and an ef- is under way to improve range and et effects. Specifically designed for weight and air portability, the 3,400- nd M102 makes extensive use of alu- um and features a strong box-trail lay- which affords a low silhouette, good ility and all-around, on-carriage tra- e. Product improvements to strength- he carriage and improve towing per- nance have been successfully tested are now being applied.

ith a longer tube than the M101A1, imum range with conventional am- ition is slightly greater at 11,500 me- Rocket-assisted projectiles (RAP) can n 15,000 meters. Tube life is about) equivalent full charges.

e burst rate of fire for three minutes n rounds per minute; the sustained is three rounds per minute.

arly 1,200 M102s have been pro- d, all by the Army's Rock Island, arsenal.

M101A1 105-mm Towed Howitzer. ly replaced by the M102 in the ac- Army, the M101A1 was first pro- d from 1939 to 1953 and is probably orld's most ubiquitous artillery piece, g been supplied to nearly 50 coun- It is capable of sustained rates of of 180 rounds per hour and has a mum range of 11,270 meters (14,500 s with rocket-assisted projectiles). ife of the cannon is rated at 7,500 harge equivalent rounds.

conventional split-trail layout, the A1 fires from its road wheels and s 4,980 pounds. A total of about 0 M101s and M101A1s were built. gun was recently produced at Rock l Arsenal, Ill., for foreign military



M102 105-mm towed howitzer in action in Vietnam.



M101A1 105-mm towed howitzer.

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120-mm Mortar Program. The Ar- has announced plans to acquire an lable 120-mm mortar as a "nondevel- ental item" (NDI), to replace the ag- M30 4.2-inch mortar. The basic char- ristics are defined in the "required rational capability" (ROC) document, h requires that the selected system improvements in range, weight, mo- y, lethality and commonality with 60- and 81-mm mortars when com- d to the 4.2-inch (107-mm) system. n investigation was conducted to de- ine what is available in the market- ; seven foreign contractors responded, hich three have been determined to the major ROC requirements. Com- ive contracting will be used to sup- a limited issue to the 9th Infantry sion (Motorized) late this year. A ed quantity of ammunition will be ured from overseas sources prior to establishment of a U.S. production

e 120-mm mortar system will be d in three configurations: the tradi- l ground-mounted version, a towed el with wheeled carriage and a ver- for use in self-propelled weapons ers.

M109-Series 155-mm Self-Propelled itzer. Like the eight-inch howitzer, M109 has been converted with a long- nnon, beginning with the M109A1 in 1972. The new M185 tube—33 calibers long compared with 20 calibers in the early M109—increases muzzle velocity and, with the M119 propelling charge, increases maximum range from 14,600 meters to 18,100 meters. Rocket-assisted projectiles boost the practical range to 24,000 meters; 30,000 is theoretically possible but not operationally feasible, due to the limitations of the carriage and tube fatigue problem.

The Army also bought 585 new weapons with the longer barrel, designated M109A2, beginning with 103 in fiscal 1977, followed by 250 in fiscal 1978, 136 in fiscal 1979 and 96 in fiscal 1980. Procurement resumed in fiscal 1984, with 120 more M109A2s at $87.2 million, and the Army is buying another 70 with $52.4 million in fiscal 1985 money.

The M109A2 includes an improved shell rammer and recoil mechanism, as well as some automotive, crew-safety and ammunition-stowage improvements and the M178 modified gun mount that is retrofitted to M109A1s as the M109A3. The M109A2 and A3 carry 22 "new family" projectiles of increased lethality and range, 12 older projectiles and two "Copperhead" laser-guided projectiles for a total of 36 rounds. The older M109s carry only 28 rounds on board.

The first M109A2s entered service at the beginning of 1980. In addition to a wide range of conventional ammunition, the M109 series can also fire a nuclear projectile. The current M454 nuclear round is to be replaced with the XM785, now under development. Like its eight-inch counterpart, the XM785 is ballistically compatible with the more modern projectiles recently introduced into service—in this case the M549A1 155-mm RAP—and thus is far more accurate, needing no spotting round. The XM785 also has the sophisticated container and security devices of the new eight-inch nuclear round.

The M109's rate of fire is four rounds per minute for the first three minutes and one round per minute for the first hour of sustained fire. The M109 series is the standard direct-support weapon in the armored and mechanized infantry divisions and is the key weapon in current efforts to boost the artillery power of those formations.

Unlike the M110-series eight-inch howitzers, the M109 has a fully enclosed fighting compartment, a turret providing all-around traverse and aluminum armor protection for the crew of six. The running gear has seven road wheels on a side and torsion-bar suspension, powered by a 405-horsepower diesel engine that affords a top road speed of 35 m.p.h.

A .50-caliber machine gun is mounted in the top turret hatch as secondary armament. Total vehicle weight is 26.5 tons



M109A2 155-mm self-propelled howitzer.

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for the M109A1 and 27.5 tons for the A2/A3 version, compared with 26.2 tons for the earlier M109.

The Army is currently evaluating proposals for a product improvement program (PIP) to be applied to a portion of the M109A2/A3 fleet. The improvements include improved armament, automotive, NBC (nuclear, biological, chemical) protection and fire control. The improvements will provide increased reliability, ease of maintenance and survivability of the system, thus extending its useful life.

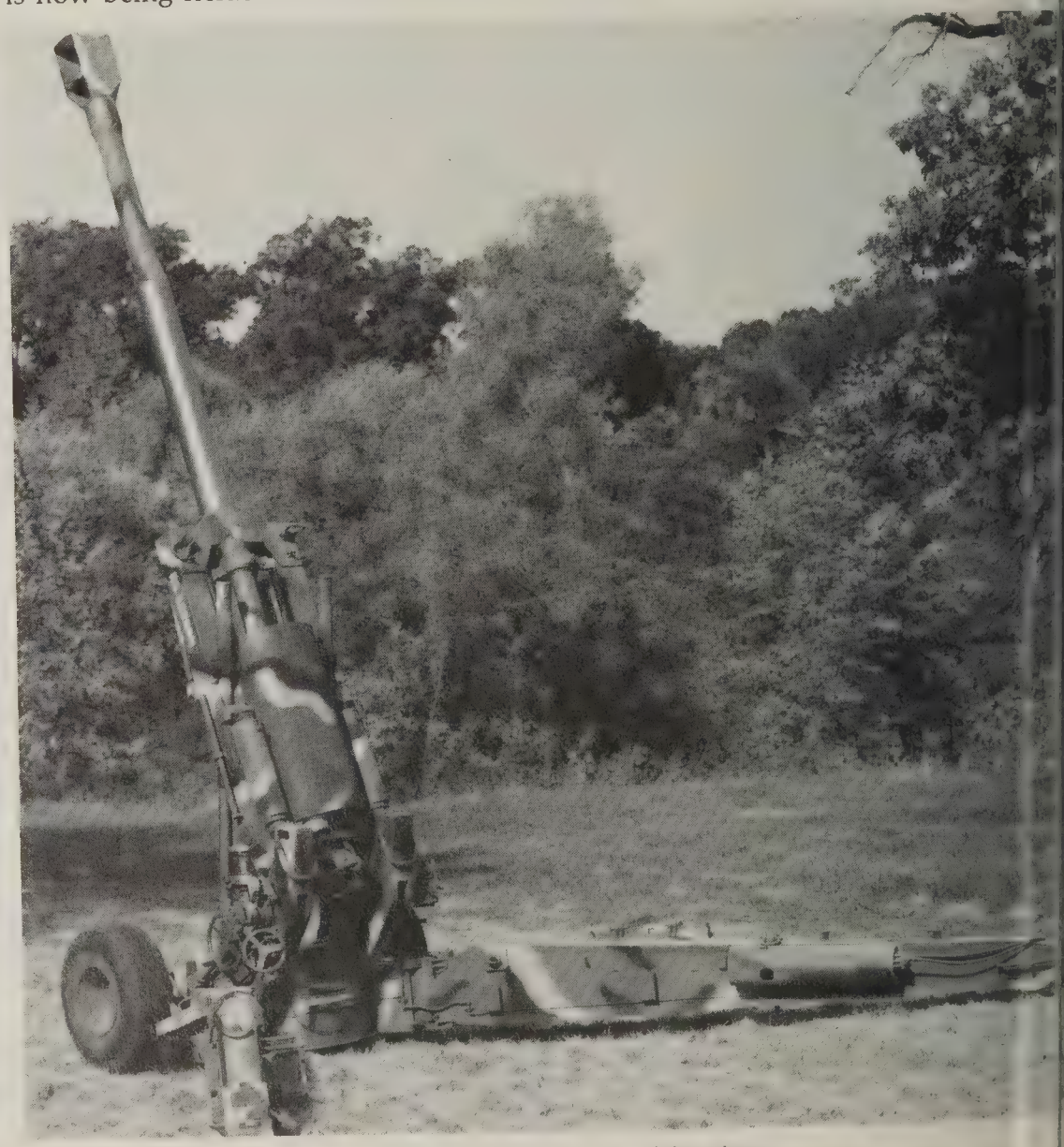
■ **M198 155-mm Towed Howitzer.** Developed from 1968, these new long-range pieces are now reaching the field in quantity, with more than 1,000 in service. Low-rate production began in fiscal 1977, when 51 guns were ordered, but was set back a year for additional studies on the requirements for towed field pieces in nondivisional artillery units. Orders resumed in fiscal 1979, when 107 pieces were funded, followed by 99 in fiscal 1980, 108 in fiscal 1981 and 200 in fiscal 1982. The procurement program has been delayed, because of costs and priorities, but the Army plans to resume orders in fiscal 1987. Including Marine Corps procurement and foreign sales, about 1,300 M198s are on order.

Although originally developed as a successor to the venerable M114A1, the M198 is now being fielded on a far wider scale in line with the Army's decision to st dardize on the 155-mm caliber everywh except the direct-support battalions in light infantry, airborne and air ass divisions. The M198 will be the stand weapon in the towed corps genera-s port battalions.

Some mobility has been sacrificed favor of the additional range and f power. At 15,470 pounds, the M19 about ten percent heavier than the M114 It is still light enough to be lifted by CH-47 helicopter, but its prime mo the five-ton truck, is not, and the we of the ammunition severely limits shifting of gun positions by helicop The M198 also strains the cross-cou towing capacity of the M813 five truck.

Maximum elevation is 72 degrees, the tube can be depressed 5 degrees. than five minutes are needed to se the piece for firing or to displace. M mum range with the M549A1 rocke sisted projectile is 30,000 meters and 22 meters with unassisted projectiles and M203 super zone-eight propellant cha

The accuracy of the M198 has even better than predicted, primarily to its highly stable firing platform. reports show that targets have been gaged at ranges of more than 30,000 ters with first-round miss distances u 100 meters and dispersion errors less



M198 155-mm towed howitzer.

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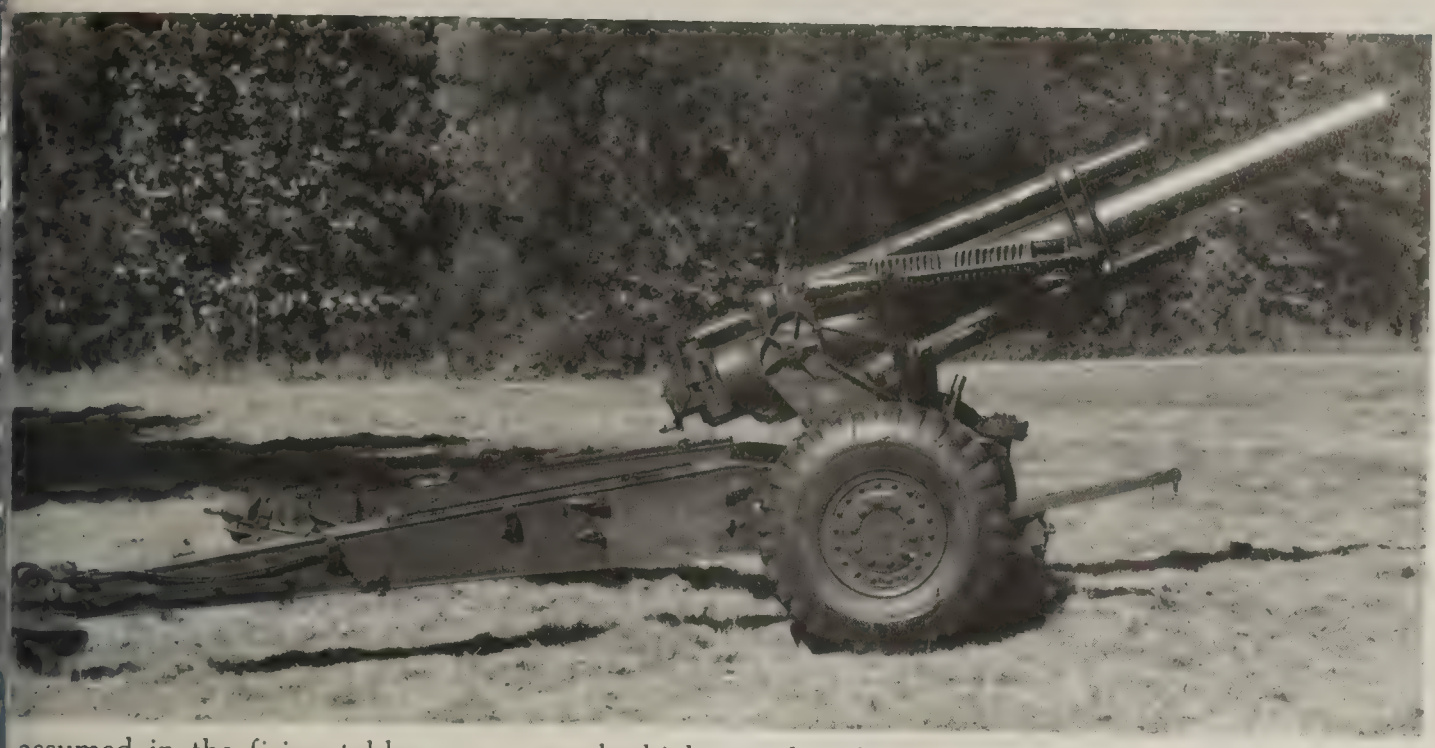
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M114A1 155-mm towed howitzer.

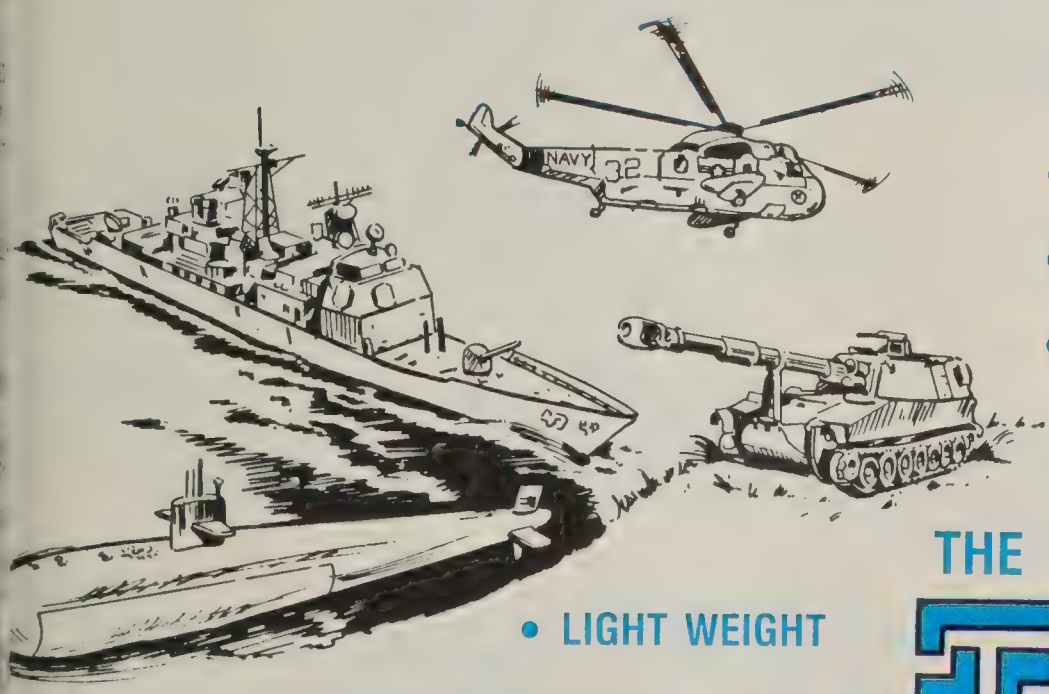
assumed in the firing tables.
maximum rate of fire is four rounds
inute for the first three minutes and
ounds per minute sustained. The gun
thermal sensing device which warns
the tube is too hot to fire. Under
conditions, M198 crews have been
o beat the nominal rates of fire with
erheating problems. Thirty-round
ns have been fired in 4.5 minutes
en-round missions have been fired
-degree temperatures at the rate of
ell every 20 to 25 seconds, without
arning device ever moving beyond
ellow" range.
M198 achieves its maximum ranges at the high muzzle velocity of 2,710 feet per second and tube life has proved to be about 1,750 equivalent full charges (EFCs). However, wear is much diminished at shorter ranges—tube life with zone-eight charges is 5,240 rounds and increases to as much as 35,000 rounds with the "green bag" charge five.

Blast overpressure with the maximum charge is high, but a special study by the surgeon general determined that the normally issued earplugs provide sufficient hearing protection, so long as no more than 12 rounds are fired in a 24-hour period. If the rate of fire is higher, the 11-man crew is supposed to back off from its normal positions and fire the gun with a 25-foot lanyard.

While the cannon are manufactured at the Army's Watervliet Arsenal, N.Y., the carriages are built by ConDiesel Mobile Equipment and the fire control components by Numax Electronics Inc. Rock Island Arsenal, Ill., builds the gun mounts and assembles the weapons. ConDiesel is assembling M198s for direct commercial sales to foreign customers.

■ **M114A1 155-mm Towed Howitzer.** This weapon, first fielded in 1942 and with extensive service in three wars, was rejuvenated in the late 1970s. The improvement is in a new cannon, the M1A2,

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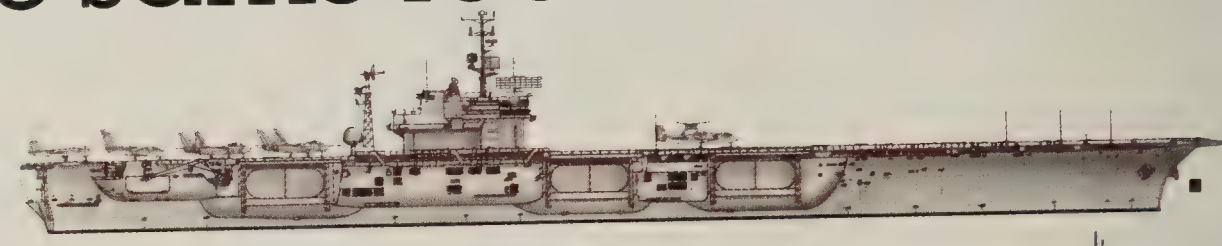


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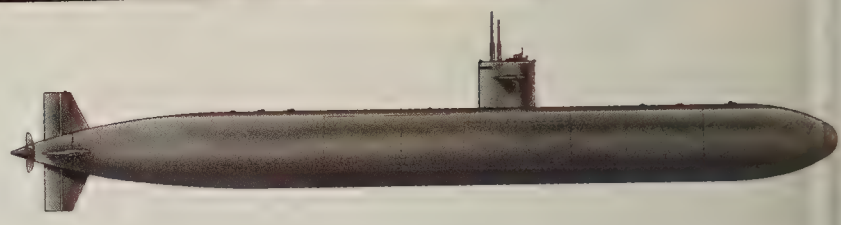
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ich is a ballistic match for the M126
e used in the M109 series of self-pro-
ed howitzers and can fire all of the
munition authorized for the M126.
ximum range is thus extended from
500 meters to 20,100 meters.
he M114A1 weighs 12,700 pounds and
a maximum rate of fire of four rounds
one minute. The sustained rate of fire
alf that of the M198—one round per
ute. Average tube life is about 7,500
nds. The Army has adopted the new
e as the M114A2 for general-support
llery units in the reserve components.
otal of about 4,700 M114s were built.

M483A1 ICM Cargo-Carrying Pro-
les. The basic 155-mm ICM (improved
ventional munitions) cargo-carrying
l, the M483A1, contains 88 miniature
l-purpose submunitions with both
ed hollow charges and fragments that
both armor penetration and antiper-
nel fragmentation effective against light
or, vehicles and personnel. Ballistic-
similar to the M483A1 are the M718
M741 remote antiarmor mine system
AMS) 155-mm projectiles, which carry
magnetically fused M75 antiarmor
es, each capable of stopping any known

nless detonated, the mines self-destruct
a predetermined length of time, al-
ng counterattacks across the mine-
seeded terrain. Together with air-deliv-
ered munitions of a similar type, RAAMS allows the commander to emplace instant mine fields anywhere within range of his 155-mm howitzers, even directly in front of an enemy attack in progress.

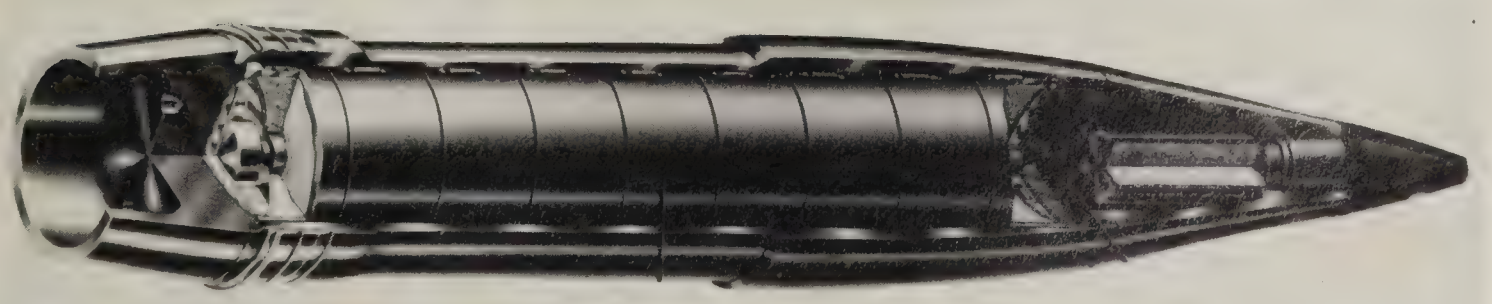
The shells can be fired to a maximum range of 17,400 meters, and a six-gun battery can lay down a field 300 meters deep and 250 meters wide with two salvos. The five-pound mines carried by the M718 have a long self-destruction time, believed to be well over 24 hours, while those in the M741 have a shorter active life. A certain number of mines in each shell can be set off by disturbance to discourage enemy mine-clearing operations.

■ **ADAM Projectiles.** A concept similar to RAAMS governs the operation of the M692 (long-life) and M731 (short-life) ADAM (area-denial artillery munition) rounds, each containing 36 antipersonnel mines within a 155-mm shell. The M74 mines are activated by a self-deploying trip wire or disturbance. A fragmentation unit is then blown upward by a liquid propellant and explodes, producing about 600 fragments moving at about 3,000 feet per second. These rounds were type classified for use in the M109-series howitzers in January 1976. ADAM rounds can be fired out to 17,400 meters.



Artist's conception of M74 antipersonnel mines being ejected from the base of a 155-mm ADAM (area denial artillery munition) projectile.

wing of the M718
5-mm ICM projec-
tile, sectioned to
how the cargo of
e antitank mines.



Army Aviation Systems Command (AVSCOM)

AVSCOM is responsible for managing the Army's fleet of nearly 9,000 aircraft, most of them helicopters, and for the development of new aviation systems. This mission ensures that Army pilots and those who provide ground support have the best equipment available when and where it is needed.

Headquartered in St. Louis, Mo., AVSCOM employs more than 5,300 civilians and 360 military personnel and has an annual budget of about $6 billion. In fiscal 1984, the command managed contracts valued at more than $5 billion.

Outlying subordinate activities are located at Ft. Monmouth, N.J.; Edwards Air Force Base and Moffett Field, Calif.; Langley Air Force Base and Ft. Eustis, Va.; and Cleveland, Ohio. In addition, AVSCOM representatives are located at several manufacturing sites including Philadelphia, Pa.; Mesa, Ariz.; Fort Worth, Tex.; Culver City, Calif.; and Stratford, Conn.

The command is responsible for life-cycle management of the Army's aviation systems beginning with research and development, continuing with procurement and production, spare parts availability, new equipment training, safety of flight and following through with maintenance to eventual overhaul. When Army aircraft become obsolete or excess, the command determines storage and disposal.

This "cradle-to-grave" management provides the Army with effective, sophisticated new aircraft and subsystems—from concept to design, development and production with evaluation against cost performance and schedule goals.

* * *

■ **Light Helicopter, Experimental (LHX).** The LHX is intended to replace an aging fleet of nearly 7,000 light utility, scout and attack helicopters now in the Army's inventory. The LHX is expected to replace the OH-6, OH-58, UH-1 and AH-1 helicopters and to complement the AH-64, AHIP (Army Helicopter Improvement Program) and UH-60 fleets. The LHX program seeks to develop an affordable family of aerial vehicles with adverse weath-



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nd night operation capabilities.
he LHX scout-attack (SCAT) version
maximize weapon platform survivay and target destruction rate by mining exposure and engagement times utilizing multiple weapons and munis with a full range of lethal effects ging from area to point targets. The will be capable of performing the nnaissance and attack roles in a single iguration. The system will also be to vary its weapons suites to meet ion needs. The LHX utility version provide internal and external cargo sport, internal tactical team personnel sport, and transport for command liaison missions and will have a deive air-to-air quality.
HX program goals to be measured nst the existing light fleet are as fol: SCAT primary mission gross weight ,000 to 8,500 pounds; unit flyaway s of $3 to $4 million for the utility on and $5 to $6 million for the SCAT on (in fiscal 1984 dollars); significant bat capability and survivability imements; single-pilot SCAT; utility on operable by a single pilot; com- engine and dynamic systems for T and utility; and a 40 percent reduc- in operating and support costs.
e LHX will be an advanced-technolconventional helicopter powered by 1200 shaft horsepower (s.h.p.) T800 nced-technology engines, will incorte crashworthy design features, will wheeled landing gear and a hybrid (nuclear, biological, chemical) pron system, will be self-deployable to pe, and will be transportable in C-141, and C-5 aircraft.
IX SCAT will be a highly maneuver- single-pilot helicopter. Nominal weaploload will consist of four "Hellfire" les, two "Stinger" air-to-air missiles a turreted gun system. The LHX T will have a minimum cruise speed 0 knots and a minimum vertical rate mb of 500 feet per minute in stan- "hot day" conditions (4,000-foot al- and 95 degrees). The integrated, nated cockpit will incorporate wide of-view optics and an advanced, inted target acquisition system.
e LHX utility version will have the engine and dynamic components as HX SCAT. The LHX utility version have six crashworthy troop seats volume for eight fully equiped com-oops and be capable of "hot day" out-of-ground-effect takeoff and a minimum cruise speed of 160 knots.
ncept formulation efforts for the LHX am began in 1981, and investigaare continuing through fiscal 1986 luce risk and accelerate preparations ntering full-scale development by econd quarter of fiscal 1987. Con- for preliminary design studies were awarded to Bell Helicopter Textron, Boeing Vertol Company, McDonnell Douglas Helicopter and Sikorsky Aircraft, a division of United Technologies Corporation, in September 1983. The advanced rotocraft technology integration (ARTI) program contracts were awarded in December 1983 to the same four airframe manufacturers and to IBM Defense Systems. The ARTI program will define the advanced, integrated cockpit design and architecture and demonstrate the feasibility of a single-pilot SCAT through limited flight demonstrations and partial and sophisticated full-mission simulations.

A request for proposal (RFP) for development of the T800 engine was released in December 1984, and a development contract was to be awarded in the summer of 1985. In May, the scope of the five ARTI contracts was expanded to include analytical and developmental work in the areas of LHX electro-optical systems and computer systems. These efforts involve detailed preliminary designs of an electro-optical target acquisition and designation system, a night-vision pilotage system, and a very high speed integrated circuit processor and operating systems software.

The LHX preliminary design effort will continue throughout 1985. Contracts were to be awarded in June for wind tunnel testing of the "best technical approach"

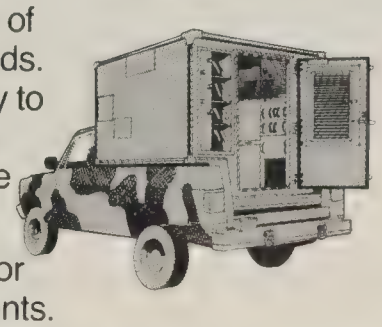
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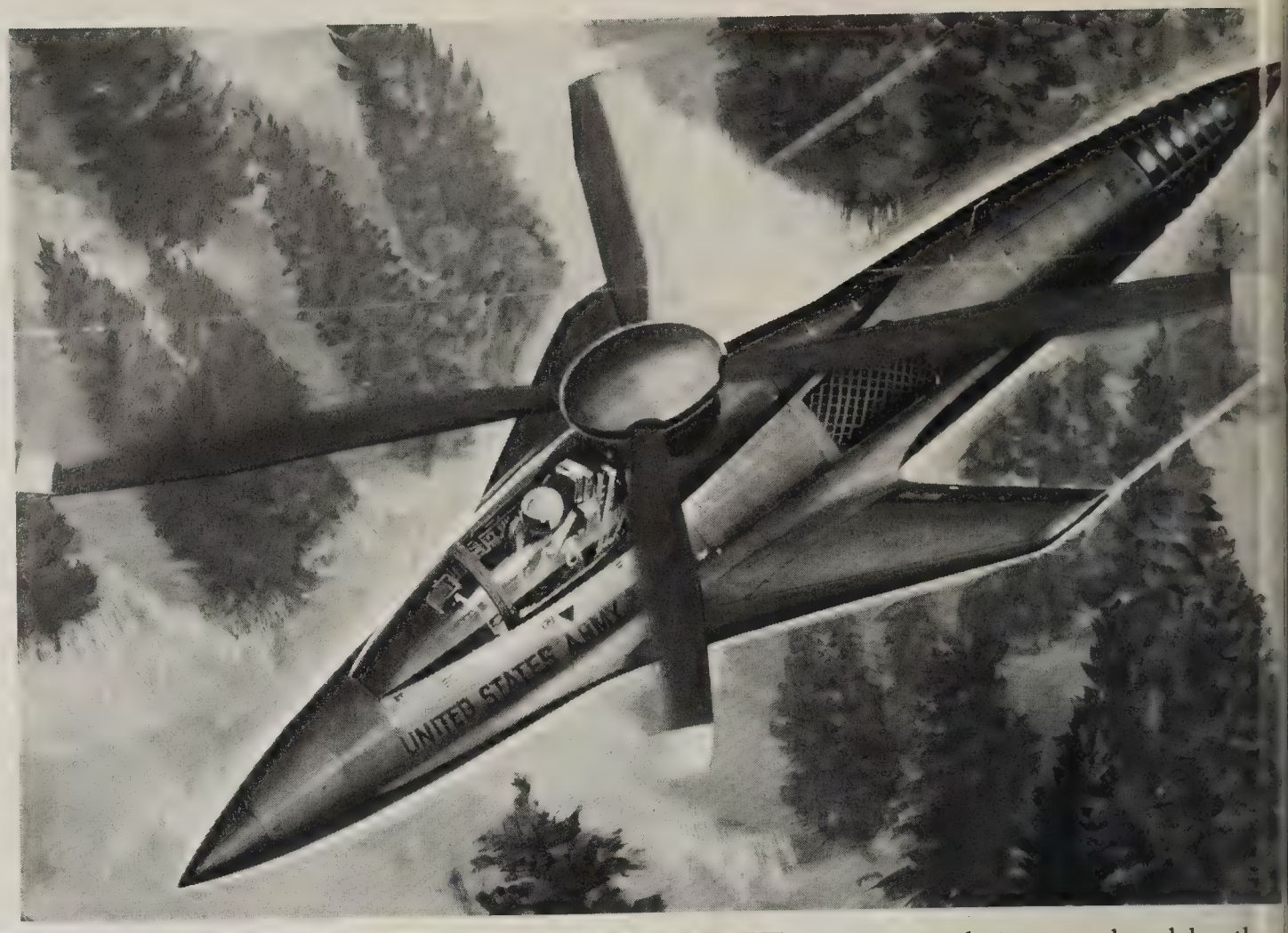
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Concept by a McDonnell Douglas Helicopter artist of what a LHX scout-attack aircraft might look like, showing the compound helicopter with the firm's NOTAR (no tail rotor) system, which uses pressurized air to give directional stability in the tail cone.



Sikorsky Aircraft, which has joined with Boeing Vertol for the LHX competition, has modified one of its S–76 commercial helicopters with an extra single-place cockpit at the nose to test one-pilot avionics for the related ARTI (advanced rotorcraft technology integration) program.

helicopter designs produced by the liminary design contracts. This effort also include development of aerodyna models for use in the ARTI full-mis simulations.

The LHX program is in the later st of concept exploration. Full-scale de opment (FSD) is scheduled to begi 1987. Proof-of-thesis efforts, to inc the ARTI program, preliminary de and wind tunnel testing, will be c pleted before entering FSD. An LHX l of agreement was approved by the A Training and Doctrine and Materiel C mands in March. A decision by A and defense systems acquisition re councils (ASARC/DSARC) is sched for May 1986, prior to entering into in January 1987.

■ **AH–64A Apache Attack Helico** The "Apache" is a quick-reacting, airb antitank weapon. Terrain limitations the unfavorable balance in armor di the need for a system that can fly qu to the heaviest enemy penetration destroy, disrupt or delay the attack enough for friendly armor and gr units to reach the scene. The Apac designed to fight worldwide and sur

The heart of the AH–64A as a we system is in the target acquisition designation system (TADS) and the night-vision sensor (PNVS). TAD cludes a low-light-level TV, a forw looking infrared (FLIR) sensor and d viewing telescope optics for target a sition. The PNVS is based on a FLI sor and, should it fail, the TADS vides the pilot a limited backup. Th also a laser range finder and a laser



Concept of a scout-attack version of the LHX by a Boeing Vertol artist.



designator to guide the craft's main armament, Hellfire antitank missiles.

The fire control system includes an air data computer and integrated helmet sights for the weapons. Although the principal mission of the Apache is the destruction of enemy armor, it is also equipped with a 30-mm cannon and 2.75-inch rockets that are lethal against a wide variety of targets. When deployed, the Apache will be the Army's primary attack helicopter and will be complemented by the "Cobras" now in the field.

AH-64A characteristics include twin General Electric T700-GE-701 turbine engines of 1690 s.h.p. each; a four-bladed fully articulated main rotor, 48 feet in diameter; a four-bladed tail rotor; a Hellfire weapons subsystem; a 2.75-inch rocket subsystem; a 30-mm area weapon system; gross weight of 14,700 pounds; length of 57 feet; width of 17 feet; and height of 14 feet.

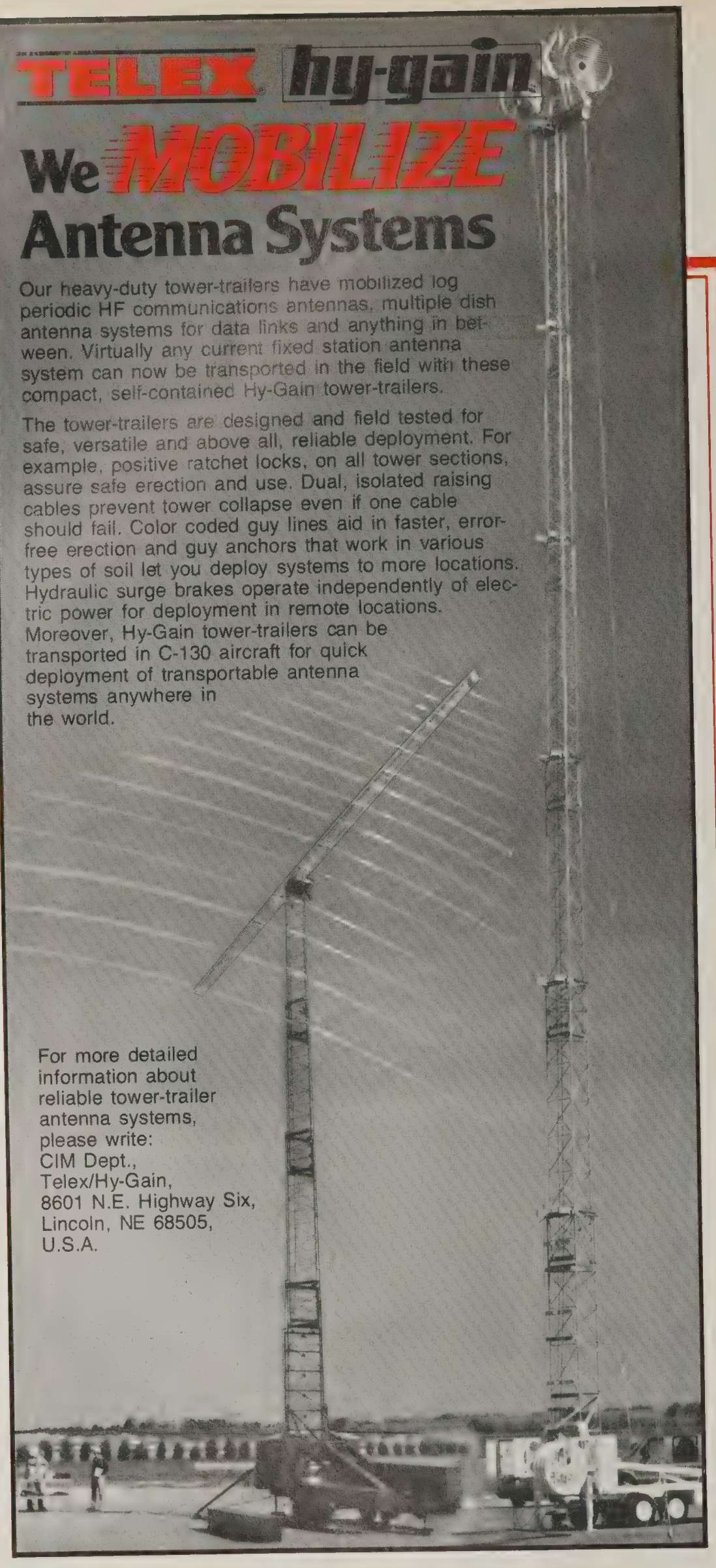
The business end of the AH-64A Apache attack helicopter, showing the FLIR (forward-looking infrared) sensor of the pilot's night-vision system mounted above the nose and, below, the sensors for the target acquisition and designation system, with a FLIR device in the starboard half of the turret and, in the left half, the daytime direct-view and TV optics, a laser designator and range finder, and a laser spot tracker. The craft's M230 30-mm cannon is seen mounted below the forward fuselage, just ahead of the landing gear.

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With the cockpit and other cri components protected by armor, the A 64A can withstand hits in vital areas f explosive shells up to 23-mm in cali A design requirement is the ability to sorb 12.7-mm hits and still fly safely at least 30 minutes. Contributing to ability is a low infrared signature, operation (50 percent quieter than AH-1S), a self-sealing fuel system backup controls. There is also a r warning set and a system for disper antiradar chaff and flares to divert in red-homing missiles.

The Apache is in production, and production examples are now being livered. The entire fleet is expected t in the field by 1990, with a total pla buy of 675 airframes. The first pro tion aircraft was delivered in January

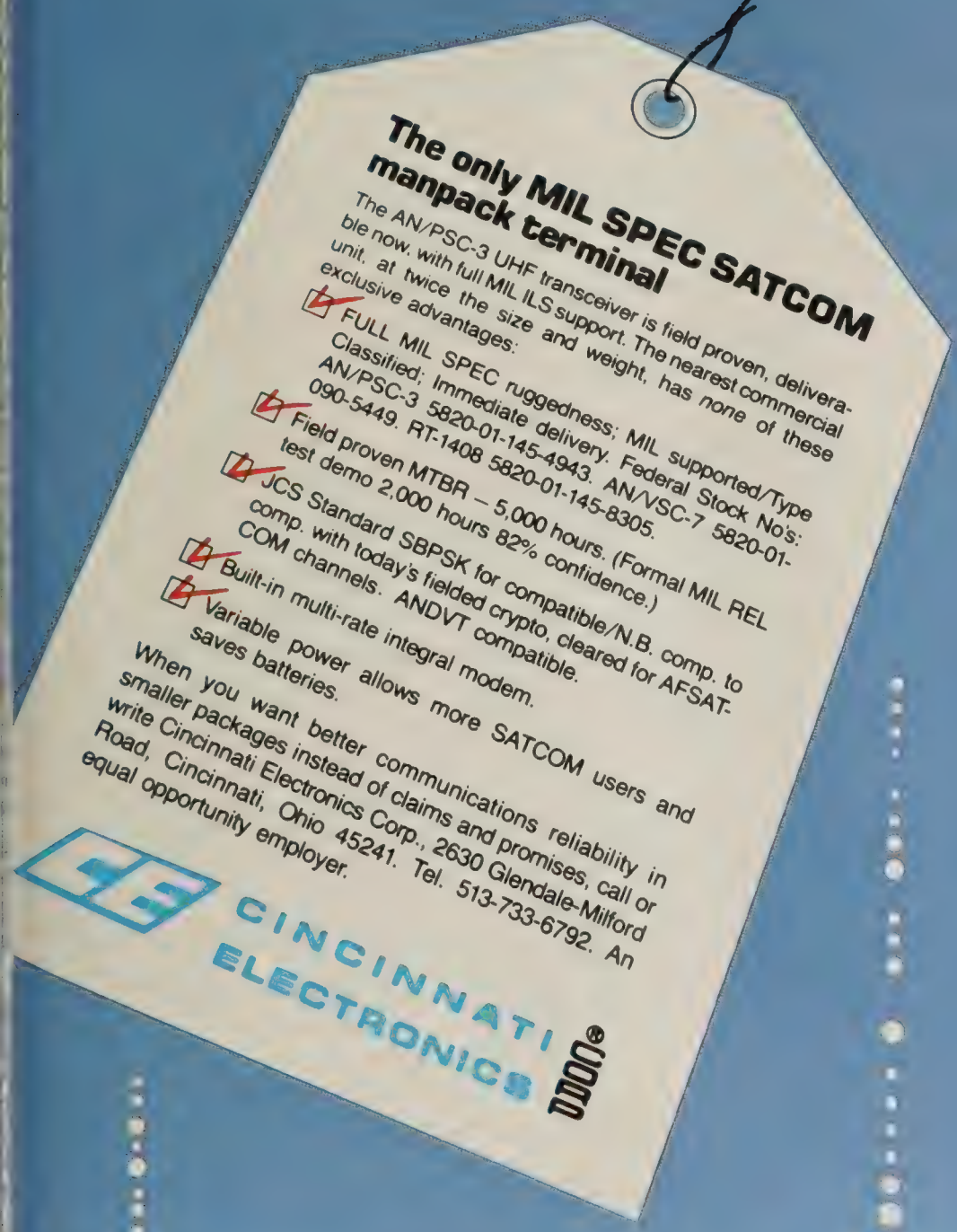
The Apache prime contractor is Mc nell Douglas Helicopter, Culver Calif. The major subcontractors are eral Electric, West Lynn, Mass., and tin Marietta, Orlando, Fla.

■ **UH-60A Black Hawk Transpor licopter.** The "Black Hawk" is design live and survive in the tactical env ment with a primary mission of troo assault, extractions and resupply of t in contact. Other missions include medical evacuation and combat s support activities. The Black Haw transport a combat-equipped 11-ma fantry squad or a 105-mm howitzer its crew and ammunition and ha range, endurance and maneuverabi make it a highly effective tactical a vehicle on the modern battlefield.

UH-60A characteristics include General Electric T700 turboshaft e of 1607 s.h.p. each; a four-bladed rotor of composite structure (tit and fiberglass) with a diameter feet, 8 inches; two 7.62-mm M60 mounted machine guns; length o feet; mission gross weight of 16,450 p gross weight of 20,250 pounds; and pounds maximum external sling capacity.

Performance includes maximum of 193 knots; hover ceiling of 10,4 out of ground effect and 14,700 ground effect; service ceiling of feet; range of 295 nautical miles; a quired endurance of 2.3 hours. "hot day" conditions, the Black will lift its crew of three and up


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The U.S. Department of Defense has given two of its four top money-saving awards to Hughes Aircraft Company for proposals that will cut costs by nearly $275 million. The Contractor Value Engineering Achievement Awards honor defense contractors for helping to trim defense costs during 1984. The Air Force cited Hughes for saving $172.8 million on the Imaging Infrared Maverick air-to-surface missile over the life of the contract. The Navy honored the company for reducing projected costs on the UYQ-21 data display system by $101.5 million. Hughes also contributed to the savings achieved by FMC Corporation, which won the Army award for cost-cutting efforts on the Bradley Fighting Vehicle System. The Value Engineering program was created to cut production costs without affecting performance, reliability, quality, maintainability, and safety standards. Last year the armed forces approved 34 Hughes VE proposals for total cost reduction exceeding $296 million. Since 1964, Hughes military customers have approved 705 changes on 52 programs for total savings of $887 million.

An advanced binocular system turns night into day for military pilots flying nap-of-the-earth missions in either helicopters or fixed-wing aircraft. The Aviator's Night Vision Imaging System (ANVIS) is a helmet-mounted binocular that intensifies nighttime scenes illuminated by faint moonlight or starlight. It uses advanced optics and mechanical components to offer high performance in a rugged lightweight package. The optical system incorporates precision injection-molded aspheric elements to provide high resolution and reduced complexity. Molded mechanical parts employ high-strength antifriction plastics for smooth mechanical operation. Hughes Optical Products, a Hughes subsidiary, builds ANVIS for the U.S. Army.

Drivers of U.S. Army combat vehicles will be able to help pinpoint targets despite darkness, smoke or haze, thanks to a new infrared imaging unit. The Driver's Thermal Viewer (DTV) is planned for installation in the M1 Abrams tank, M2/M3 Bradley Fighting Vehicles, and M60A3 tanks. It produces a TV-like image by sensing temperature differences among objects in a scene. Although designed as a driving aid, the DTV will have a wide field of view to help the crew acquire targets. The device, designated the AN/VAS-3, is in full-scale engineering at Hughes.

In demonstrations in two Asian countries, a military laser device registered near-perfect scores in locating targets and designating them for laser-homing weapons. The Ground/Vehicular Laser Locato Designator (G/VLLD) is designed for use by forward observers. It can be mounted on armored vehicles or used with a ground tripod to designate targets for laser-guided and conventional weapons. In Japan, G/VLLD located and designated targets for Copperhead missiles during a Japanese Defense Agency evaluation. It helped Copperheads make hits on moving and stationary targets. In South Korea, the Hughes device performed flawlessly in demonstrations sponsored by the U.S. Army. Copperhead artillery shells scored hits against three moving and seven stationary targets.

The maze of spaghetti-like wiring found in computerized military systems will soon be easier to plan, produce, and test. Hughes is developing a computer system to turn wire harness making into a paperless operation. The Integrated Wire System (IWS) will cut planning time by a third by reducing preparation, minimizing logic errors, and incorporating changes quickly. It will cut assembly time by up to 15% due to reductions in change requests, false starts, and rework. Test engineers also will be able to plan testing routines faster.

For more information write to: P.O. Box 45068, Dept. 74-2, Los Angeles, CA 90045-0068

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A UH–60A Black Hawk helicopter fitted with the stub wings and extra attachment points of the external stores support subsystem (ESSS) carrying, in this case, a full load of 16 Hellfire antitank missiles. The ESSS, which is being built into new aircraft and retrofitted to earlier ones, will normally carry extra fuel, reconnaissance packages or mine dispensers, but the Black Hawk has also been qualified with Hellfire.

...t-equipped troops, climb vertically ...ate of more than 450 feet per min... ...d cruise at 145 knots. A combat ...rt aviation company (CSAC) can ...aneously lift 165 troops. Three ...s can lift the assault elements of a ...attalion, including its 81-mm mor... ...nd TOW and "Redeye" missile ... including quarter-ton trucks.

... Black Hawk's survivability char... ...tics include low-reflective paint; ...d noise levels; reduced radar cross... ...; no visible engine smoke or flame; ...d crew seats; redundant flight con... ...ydraulic and electrical systems; de... ...ystems; ballistically tolerant main ...il rotor systems; a crashworthy ...ling fuel system; and an engine ...xiliary power unit fire detector ...tinguisher system.

... Army is issuing the UH–60A Black ... to high-priority units in the conti... United States and overseas. Initial ...; in Europe, South Korea, Western ...and and Panama is complete. The ...der of fiscal 1985 deliveries were ...o Forces Command and Army Na... Guard units.

... UH–60A is being procured under ...-year, fixed-price multiyear contract covering fiscal 1985–87. This $783 million contract is for 288 airframes. This is the second three-year multiyear contract for the Black Hawk, which is the first major system to go into a second multiyear contract. The total planned buy is 1,805 airframes. Approximately 650 aircraft were in the field as of June 1985.

A "hover infrared suppressor subsystem" (HIRSS) is under development for the Black Hawk and will reduce the infrared signature of the engine exhaust in all flight regimes from hover through forward flight. An external stores support subsystem (ESSS) is also in the near future. It will enable the aircraft to self-deploy to a range of 1,150 nautical miles. A crashworthy 230-gallon fuel tank is under development as part of the ESSS. The ESSS and the crashworthy fuel tanks are expected to be available in mid-1986. The HIRSS is projected for installation beginning early 1987.

The UH–60A prime contractor is Sikorsky Aircraft, Stratford, Conn. The major subcontractor is General Electric, West Lynn, Mass.

■ **AH–1S Cobra Attack Helicopter.** The primary mission of the AH–1S Cobra are antiarmor and armed escort and reconnaissance. Armed with point and improved area weapon systems, the AH–1S provides a highly mobile aerial platform from which responsive fire can be delivered on targets immediately upon observation while attaining maximum effect from the element of surprise. Incorporation of programmed aircraft and weapons subsystem improvements will enhance the capability of the helicopter.

AH–1S characteristics include a Lycoming T-53-L-703 turbine of 1,800 s.h.p.; a teetering 44-foot-diameter main rotor with two fiberglass blades; an 8.5-foot-diameter, flapping-hinge tail rotor; any mix of the following weapons within the 10,000 pound gross weight: eight TOW missiles; 750 rounds for the 20-mm cannon; 76 2.75-inch rockets; empty weight of 6,598 pounds; length of 44 feet, 7 inches; height of 12 feet; and fuel capacity of 259 gallons.

Performance includes maximum sea-level speed of 171 knots, depending on configuration; normal cruise speed of 123 knots; maximum range of 362 nautical miles; maximum endurance of 2.6 hours; and rate of climb of 1,580 feet per minute.

Production of the modernized AH–1S



AH–1S Cobra attack helicopter.

continues for the Army National Guard and foreign military sales, with orders through 1986. The Army has started the "Cobra fleet life extension program" (C-FLEX). The C-FLEX product improvement program includes: rotor hub and pitch change tube improvements and the addition of a new drive shaft to increase maintainability and safety; cockpit lighting compatible with the use of night-vision goggles; TOW missile system reliability improvements and a new TOW test set; and radio upgrades for increased supportability.

The other major improvement is the Cobra "C-NITE" program that will allow the Cobra a 24-hour tank-killing capability. C-NITE incorporates the M1 tank thermal-imaging sight and the TC system video thermal tracker electr into the AH–1S helicopter. This wil vide a capability for the AH–1S t TOW missiles at night, as well as th obscurant (smoke and fog) weather ditions, and defeat electro-optical termeasures.

Approximately 1,000 Cobras are ing in Army units, including thos tioned on the borders of West Ger and along the demilitarized zone in Korea.

The Cobra prime contractor is Be icopter Textron, Fort Worth, Tex major subcontractors are Avco L ing, Stratford, Conn., and McD Douglas Helicopter, Culver City,

■ **OH–58D AHIP (Army Heli Improvement Program).** The OH will provide close combat suppo connaissance, security, target acqu and designation, fire support, and mand and control for the ground mander. The AHIP will operate cavalry, attack helicopter and field lery units. The OH–58D will als vide day and night support to a ground commanders for battlefie servation.

The OH–58D will show improv craft performance for nap-of-th (NOE) flight; day, night and a weather operations worldwide; im NOE navigation and communic provisions for an air-to-air Sting sile system; enhanced vision equ for target acquisition and desig and improved survivability meas

OH–58D characteristics incluc Allison gas turbine T703-AD-700 shaft engine rated at 650 s.h.p.; posite four-bladed main rotor 35 diameter; a composite main rotor composite tail rotor 5 feet, 5 in

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OH–58D AHIP (Arm helicopter improvement program).

diameter; provisions for the defensive Stinger; length of 33 feet, 10 inches; mission gross weight of 4,296 pounds; and maximum gross weight of 4,500 pounds.

Performance includes maximum cruise speed of 120 knots; endurance of 2.4 hours; and vertical rate of climb of 560 feet per minute in standard "hot day" conditions.

Production is already under way with contracts for long-lead-time items for the first 16 aircraft. The Army plans to procure 578 OH–58D helicopters over a seven-year period.

The AHIP prime contractor is Bell Helicopter Textron, Fort Worth, Tex. Major subcontractors are McDonnell Douglas Corporation, Huntington Beach, Calif.; Northrop Corporation, Anaheim, Calif.; Sperry Flight Systems, Albuquerque, N.M.; and the Allison Gas Turbine Division of the General Motors Corporation Defense Group, Indianapolis, Ind.

■ **CH–47D Chinook Medium-Lift Transport Helicopter.** The CH–47D is a medium-lift transport helicopter designed to improve force mobility. It is used primarily to transport personnel, weapons, ammunition, equipment and other cargo in general support of combat units. The CH–47D can carry either internal or external loads. Most operations consist of transporting logistics supplies as external loads. Emphasis is also being placed on rapid internal cargo handling to accommodate standard pallets.

Routinely, the CH–47D operates in secure areas, but special missions require operation in proximity to the front li In support of that concept, there is creasing emphasis on night terrain fly Payloads up to approximately 25 pounds can be carried, depending or dividual mission profiles and amb conditions.

CH–47D characteristics include Lycoming T55-L-712 turboshaft eng tandem three-bladed counterrotatin berglass rotors, 60 feet in diameter; imum gross weight of 50,000 pou empty weight of 23,149 pounds; ov length of 98 feet, 11 inches; height feet, 11 inches; and fuel capacity of gallons.

Performance at the design weigh 33,000 pounds includes maximum flight speed of 158 knots; single-e



A CH–47D Chinook medium-lift transport helicopter demonstrates its water-landing capability.

CH–54A medium-lift helicopters.



ce ceiling of 13,100 feet; the ability ver out of ground effect up to 17,250 and maximum rate of climb of 3,450 per minute.

e CH–47D has composite rotor blades; ndant and separated systems such as ie and flight controls; armor plating; auxiliary oil systems in the forward aft transmissions.

e program is in the fourth year of uction. The Army plans to modern- 36 CH–47A, –B and –C models to D" configuration for one-to-one re- ment in the field. Approximately 63 47D "Chinooks" were in the inven- as of April 1985.

e program has been within projected and on schedule since the begin- The program was also the first to er aircraft to the field with all of the sary parts, tools and training in . In 1984, the first operational unit equipped in the 101st Airborne Di- n (Air Assault), Ft. Campbell, Ky.

e Chinook prime contractor is Boe- Vertol Company, Philadelphia, Pa. r equipment suppliers are Avco Ly- ng, Stratford, Conn.; Turbomach, Diego, Calif.; Litton Industries, Chi- Ill.; and Honeywell Inc., Minneap- Minn.

CH–54 Tarhe Medium-Lift Helicop- he CH–54 provides combat service support airlift for movement of heavy supplies, vehicles, aircraft and equipment. It is also used to airlift units engaged in combat operations and to supply these units in the field.

CH–54B characteristics include two axial-flow gas turbine engines of 4,800 s.h.p. each, manufactured by Pratt & Whitney Aircraft Division of United Technologies; a six-bladed, single main rotor; an anti-torque tail rotor; empty weight of 19,755 pounds; and maximum gross weight of 47,000 pounds.

Performance includes maximum speed of 115 m.p.h.; cruising speed of 98 m.p.h.; range of 241 miles; and an external payload of 16,250 pounds or 45 passengers or 24 litter patients in a detachable pod.

The CH–54B is equipped with a removable, single-point 25,000-pound-capacity hydraulic hoist system and a removable, four-point 20,000-pound-capacity hydraulic cargo load suspension system.

A modification program will extend the life of the CH–54 fleet to the year 2000. Seventy-two aircraft are still operational: 45 CH–54As and 29 CH–54Bs.

The manufacturer is Sikorsky Aircraft, a division of United Technologies.

■ **OV–1D Mohawk Surveillance Aircraft.** The OV–1D is a two-place, twin-turboprop combat aircraft equipped with side-looking airborne radar and photographic or infrared sensors capable of monitoring enemy operations in daylight, darkness and bad weather. The primary sensor is the AN/APS-94F airborne radar surveillance system.

OV–1D characteristics include two Lycoming T53-L-701A turboprop engines of 1,400 equivalent s.h.p. each; two Hamilton Standard 53C51-27 propellers 10 feet in diameter; length of 40 feet, 8.5 inches; height of 12 feet, 8 inches; wing span of 48 feet; and maximum gross weight of 18,300 pounds.

When carrying the radar pod, OV–1D performance is as follows: maximum speed, 251 knots; cruising speed, 217 knots; range, 892 nautical miles; endurance, 4.17 hours; and rate of climb, 3,466 feet per minute. With infrared and photo sensors only, maximum speed is 265 knots; cruising speed, 223 knots; range, 938 nautical miles; endurance, 4.28 hours; and rate of climb, 3,618 feet per minute. The service ceiling is 25,000 feet in either configuration.

The OV–1D is deployed in military intelligence battalions (aerial exploitation type). The current program funds safety-related product improvements to the airframe and a service life extension program.

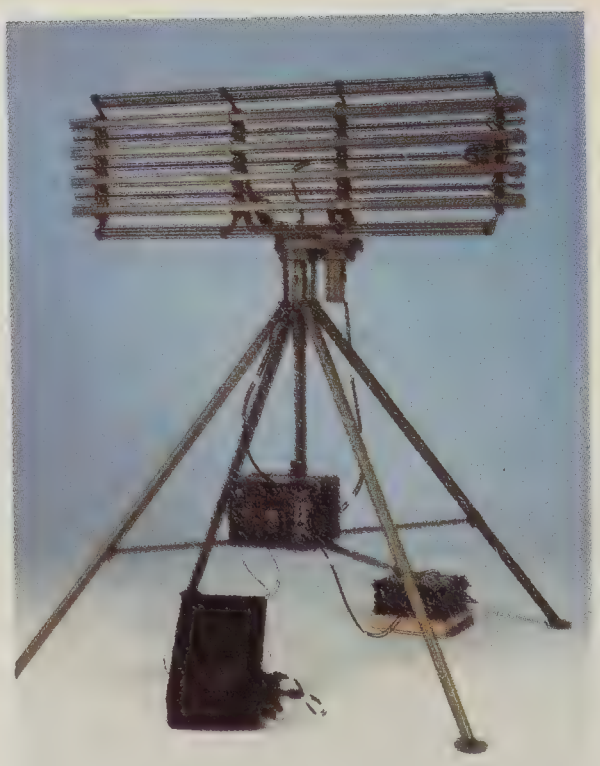
The contractors are Grumman Aerospace Corporation, Stuart, Fla.; Motorola Inc., Tempe, Ariz.; Texas Instru-

1D Mohawk surveillance aircraft, arrying the fuse- ge-mounted pod the side-looking airborne radar.





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RU–21H aircraft carrying the basic Guardrail V electronic intelligence system.

, Dallas, Tex.; and Chicago Aerial ries, Chicago, Ill.

Guardrail V Aircraft. "Guardrail V," bined airborne and ground com- ations intelligence system, is de- to intercept and locate enemy com- ations emitters. The system pro- timely and accurate data on enemy ons and plans and enables the com- er to concentrate his combat re- s at the critical time and place. stem comes in two configurations— sic RU–21H Guardrail V mounted nodified U–21 utility aircraft and the RC–12D Improved Guardrail V which uses a modified C–12 utility aircraft.

Both basic aircraft are military versions of the Beechcraft King Air and Super King Air light utility transport aircraft. The RU–21H is powered by two 550-s.h.p. PT6A-20 turboprop engines built by Pratt & Whitney Aircraft of Canada, giving the craft a service ceiling of 24,000 feet and endurance of four hours. The mission weight of the RU–21H is 10,200 pounds. With a mission weight of 14,200 pounds, the RC–12D achieves a service ceiling of 27,000 feet and endurance of 5.8 hours on two 850-s.h.p. PT6A-41s.

Guardrail V systems have been deployed throughout the world and will soon be supplemented by Improved Guardrail systems. The first Improved Guardrail system has been fielded, and a second is in the test and integration phase.

The contractors are Beech Aircraft Corporation, Wichita, Kan., and Electromagnetic Systems Laboratories Inc., Sunnyvale, Calif. (See also the "Guardrail V" entry in the Communications-Electronics Command section.)



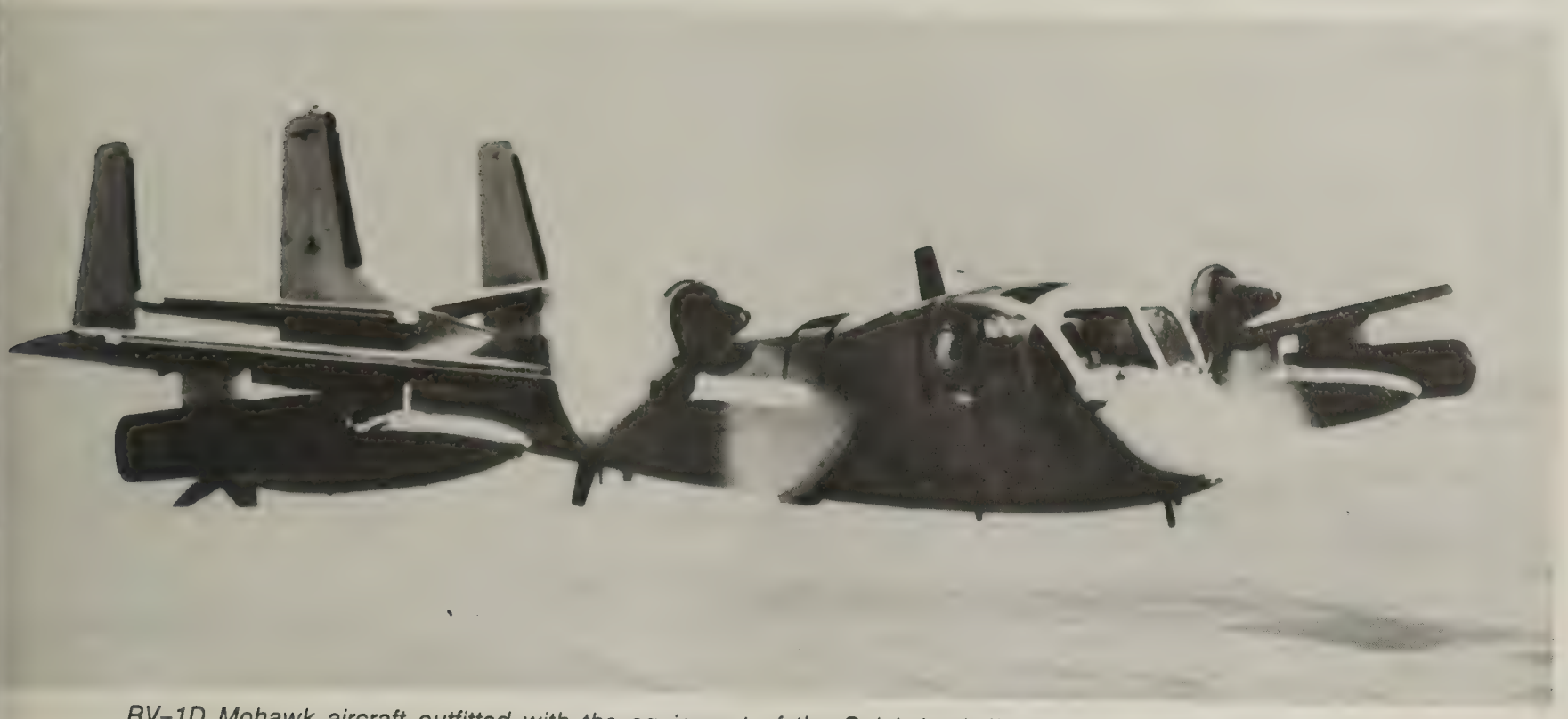
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RV–1D Mohawk aircraft outfitted with the equipment of the Quick Look II electronic intelligence system.

Quick Look Aircraft. The "Quick ." system is an airborne, automatic puter-controlled electronic intelligence m that provides corps and division nanders with the location and type oncommunicating emitters, such as s. Quick Look's airborne electronic ment is mounted in the RV–1D Mo- aircraft and is capable of monitor- enemy operations by day or night in the worst of weather conditions. e aircraft's characteristics are the as for the OV–1D, as are the spec- ions, including a maximum gross ht of 18,300 pounds. Mission weight 882 pounds.

formance includes maximum and ng speeds of 265 and 200 knots, ctively; service ceiling of 25,000 feet; of 877 nautical miles; endurance of 4.18 hours; and rate of climb of 2,300 feet per minute.

Quick Look companies are located both in the continental United States and overseas.

Manufacturers are Grumman Aerospace Corporation, Stuart, Fla., and UTL Corporation, Dallas, Tex.

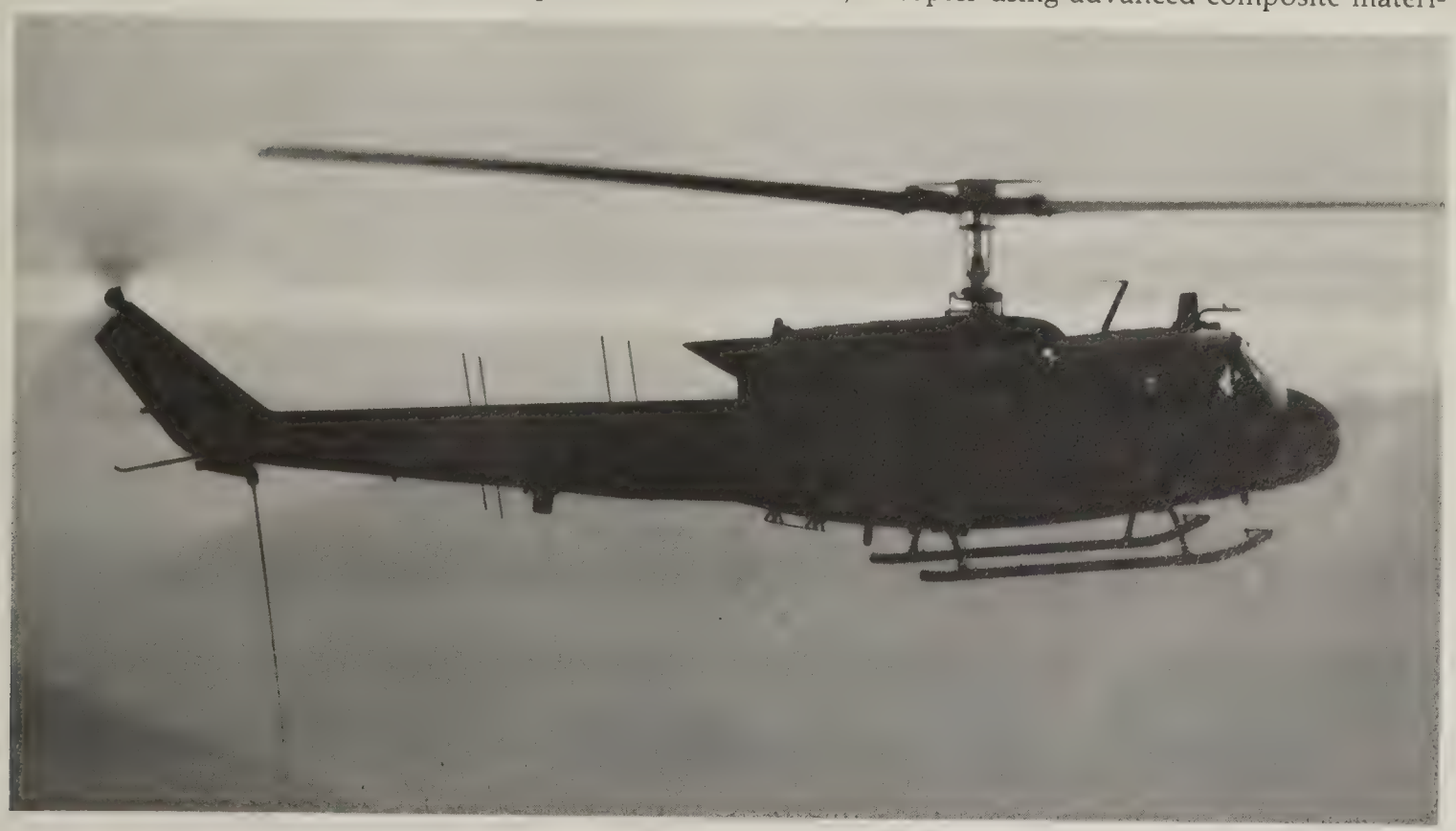
■ **Quick Fix Helicopters.** "Quick Fix" is a heliborne tactical jamming system configured in the EH–1H, EH–1X and EH–60A helicopters. Each aircraft has the capability to intercept and jam radio communications, and the EH–1X and EH–60 versions can also locate communication transmitters. Quick Fix aircraft will be organic to the division, separate brigade and armored cavalry regiment.

Characteristics include mission gross weights of 8,800 pounds for the EH–1H, 9,200 pounds for the EH–1X and 17,300 pounds for the EH–60A. The EH–1H can remain on station for up to 1.7 hours; the EH–1X, 1.5 hours; and the EH–60A, 4.8 hours.

Several interim EH–1H and EH–1X systems are currently fielded, and the EH–60A is in production.

The manufacturers are Electromagnetic Systems Laboratories Inc., Sunnyvale, Calif. (EH–1X); Sikorsky Aircraft, Stratford, Conn. (EH–60A); and Tracor Inc., Austin, Tex. (EH–60A). (See also the "Quick Fix" entry in the Communications-Electronics Command Section.)

■ **Advanced Composite Airframe Program (ACAP).** The ACAP is developing the design, manufacturing and testing technology for a lightweight utility helicopter using advanced composite materi-



EH–1X helicopter, arrying the Quick IIA suite of com- nications-locating -jamming equip- ment.

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als in its construction. The application of fibrous composite materials to helicopter structures provides the opportunity to field a lower-cost helicopter with a lower empty weight and improved performance characteristics. The program's goals are to demonstrate compliance with military crashworthiness requirements and improvements in reliability, vulnerability, safety and survivability, while achieving a 17 percent reduction in airframe production costs and a 22 percent reduction in airframe weight when compared to a baseline metal airframe.

Two contractors, Sikorsky Aircraft and Bell Helicopter Textron, are pursuing parallel efforts incorporating different manufacturing techniques. Upon completion of ACAP, the technology demonstrated will have reduced the risk to a level acceptable to both the Army and industry.

The Sikorsky ACAP test helicopter made its first flight in August 1984 and has completed a full expansion of the flight envelope.

Bell has completed fabrication of the static test article and the flight test vehicle and was scheduled for first flight in the summer of 1985.

■ **Advanced Digital/Optical Control System (ADOCS).** The ADOCS program objective is to develop advanced flight control technology, including advanced main and tail rotor controls, along with fluidic/composite back-up controls. ADOCS will be demonstrated to prospective users.

The development, verification and application of improved flight control technology will provide greater mission capability, survivability, maintainability and cost effectivess while significantly decreasing pilot workload.

The task includes the integration of control system logic, control media, displays, sensors and cockpit controls into the aircraft system to perform the appropriate functions.

A major thrust for the future will be to apply the results of exploratory engineering development to reducing pilot workload and system cost while enhancing mission effectiveness of current and future helicopter weapon systems during adverse weather, day and night, and under low-level, nap-of-the-earth conditions.



Experimental Bell helicopter built of lightweight composite materials for the Army's ACAP (advanced composite airframe program).

Completion of flight tests is scheduled for January 1986. Production recommendations will be submitted with a final report next spring.

■ **Night Navigation and Pilotage System (NNAPS).** The NNAPS program objective is to develop an airborne-qualified system which will provide a digitally based topographic map display, automatic continuous navigation updating via terrain-aiding techniques and generation of all symbology required to use the system as a tactical situation display. NNAPS display modes include elevation shades of gray, sun-angle slope shading and cultural features.

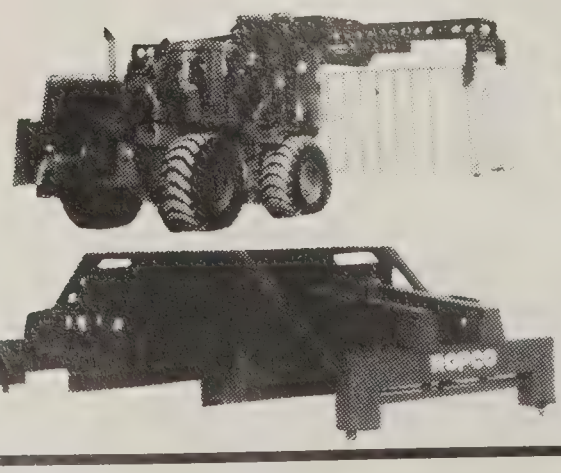
This program is an ongoing exploratory development effort. The map system —which includes a Bendix color remote map reader, symbol generator and ca ode ray tube screen—has been delive and will be integrated into the Air Fo advanced fighter technology integra (AFTI) simulator for evaluation.

■ **Voice Interactive Avionics** (VI VIA will provide Army aviation wit pilot-machine interface for voice reco tion and response techniques to red pilot workload. A major portion of effort involves the development of ap priate voice recognition algorithms will perform effectively in noisy helic ter cockpits. Additional efforts incl the development and definition of vo ulary requirements and human factors workload investigations for various craft missions.

This program will yield a family algorithms, as well as demonstration h ware which may be easily adapted to ture aircraft and improved older mo

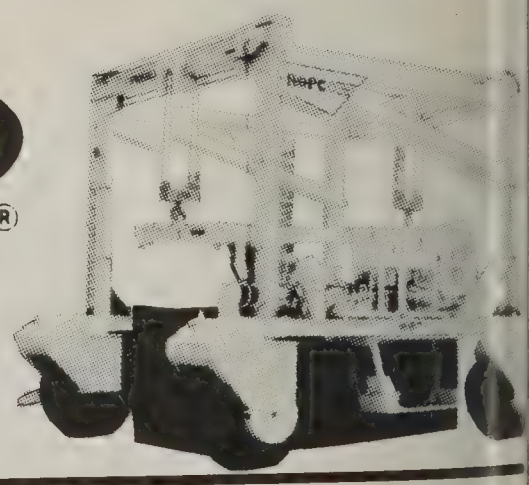
Initial algorithm sets have been

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l. Demonstration hardware for the program phase was to be operational ugust 1985, in the "systems test bed vionics research" (STAR) aircraft.

y Communications-Electronics Command (CECOM)

ated at Ft. Monmouth, N.J., CE- provides the full spectrum of ser- in the field of communications-elec- s.

he CECOM Research and Develop- Center, scientific concepts are ap- to new communications equipment ystems. The Research and Develop- Center is dedicated to development cquisition of command, control and unications systems that aid the bat- d commander.

ny project managers for the follow- stems report through the CECOM ander: mobile subscriber equipment actical communications equipment s; multiservice communications sys- operations tactical data systems; n-locating reporting system and tac- information distribution systems; te communications; single-channel d and airborne radio subsystems GARS); and test, measurement and stic equipment.

Following development of a communications-electronics system or item, CECOM acquires and manages it, contracting for the full range of equipment and systems, as well as spare parts, tools and special items for maintenance and repair.

The readiness tasks of worldwide materiel distribution and integrated management of systems and repair and support items are accomplished through the CECOM National Inventory Control Point. The CECOM National Maintenance Point supports fielded systems by providing engineering expertise, technical literature and worldwide technical support.

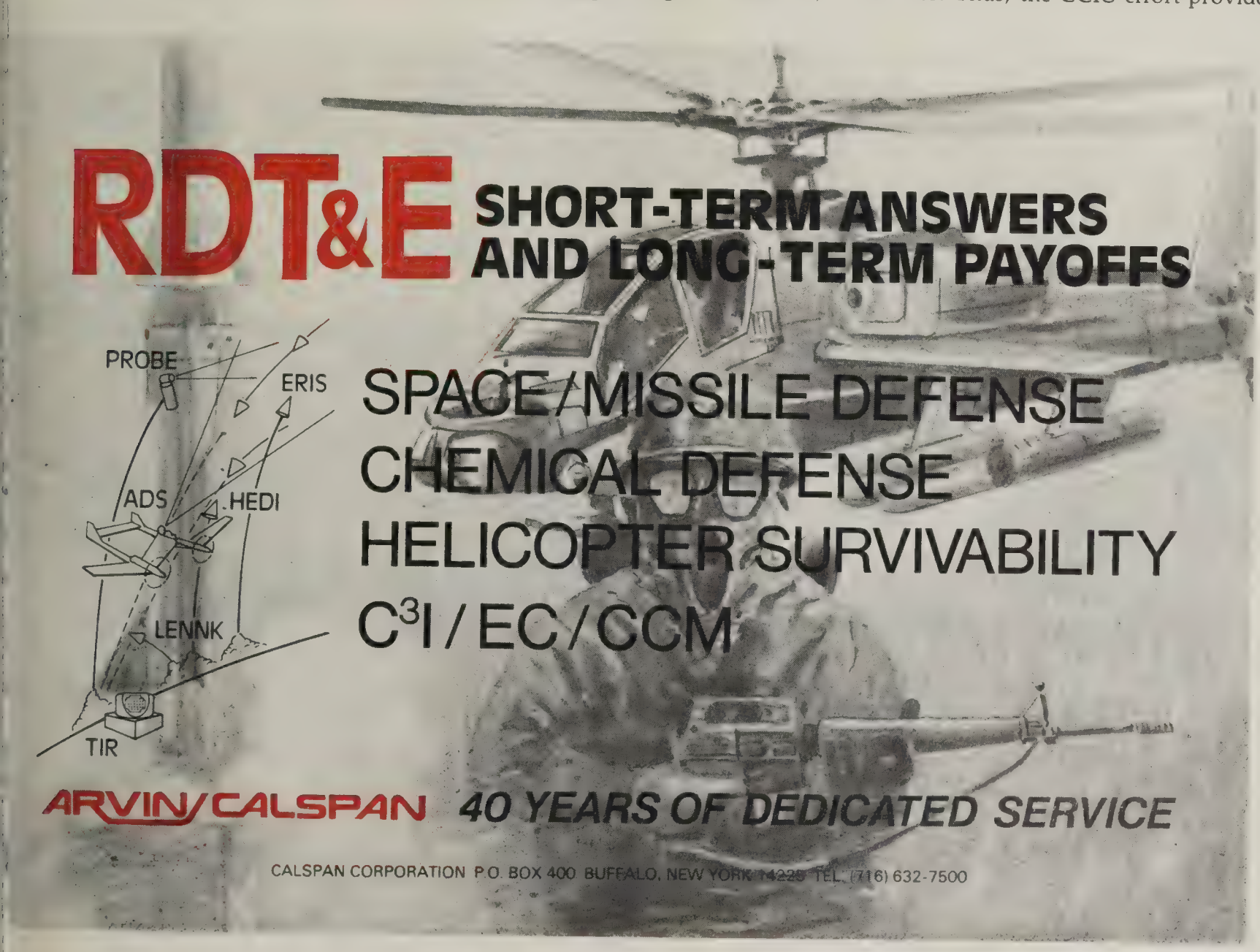
CECOM's Center for Systems Engineering and Integration looks at future tactical command and control systems for two attributes: survivability and continuity of operations (CONOPS). Geographically distributed processing is an emerging technology which is currently undergoing extensive exploratory development to help achieve these goals.

Salient characteristics have been established for the Army command and control (C^2) system concepts which support the need for distributed processing in C^2 systems. These are embodied in the conceptual architecture called "command control subordinate systems" (CCS^2). The CCS^2 architecture defines five functional areas of C^2 corresponding to maneuver, fire support, air defense, intelligence, electronic warfare and combat service support.

The force-level commander must be able to command, control and communicate with his combined forces from any one of the CCS^2 nodes. Thus, the geographically distributed processing architecture under development allows the commander's critical information needs to be replicated and processed at any number of different physical locations.

System architectural concepts and designs are being developed in an experimental distributed processing system called "command control information utility" (CCIU). The CCIU comprises loosely coupled systems of processor elements, data bases and software. The CCIU effort addresses key technical issues of the geographically distributed C^2 system, including distributed system control, distributed data bases, security, data element standardization, data exchange protocols, data compression and user interfaces.

At intervals throughout the program, models of specific subsystem architectures are being demonstrated. These permit evaluation of alternative applications such as cellular command post architectures, survivability of CCS^2 control elements and CONOPS of major operational facilities. Thus, the CCIU effort provides



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rete design direction for timely ap-
tion to evolving C² systems.
nong the emerging technologies iden-
l for research projects in CECOM's
er for Tactical Computer Systems
rtificial intelligence (AI), distributed
essing and software productivity.
tificial intelligence has the potential
utomating the thought process. Re-
h in AI is concentrating on develop-
of techniques useful for providing
tolerant software (adaptive systems)
or applications to Army command,
ol, communications and intelligence
systems. This includes application
hniques of knowledge representation
expert systems to the development
prototype battlefield commanders' aid
.) which would assist the battlefield
nander in making decisions in mis-
planning, evaluation and intelligence
sis.
tributed processing includes efforts
mputer security and networking. Ef-
are being directed to develop tools
echniques for development of se-
operating systems (OS), facilities to
nstrate tactical data base manage-
systems (TDBMS) and for the inte-
n of TDBMS and OS. There is also
imentation in the techniques of dis-
ed processing for the purposes of
ncing the survivability of battlefield
nated systems (BAS) and facilitating
rking in distributed processing sys-

tware productivity includes investi-
s in reusable software technologies,
ally for "Ada" language parts devel-
nt, automated software composition
ology, state-of-the-art software
s technology and technologies for
are measurement.
COM's Center for Communications
ns is looking at three major com-
ations systems: packet radio switch-
chnology, fiber optics and millime-
ve transmissions. These are discussed
here in the text.

* * *

Tactical Fire Direction System (Tac-
This large-scale, integrated, field
y, fire direction system was retained
duction in 1980 when Congress ap-
d funds for another 43 sets. These
l be enough to finish equipping all
Army division artilleries and field
y brigades. There will be equip-
for corps artillery as well.
tral to the "Tacfire" system, which
es at artillery battalion levels and
is the AN/GYK-12 computer, a
eneration machine using large-scale
ted circuits and with a memory
nt to store all conceivable infor-
relevant to battalion fire missions
re planning.

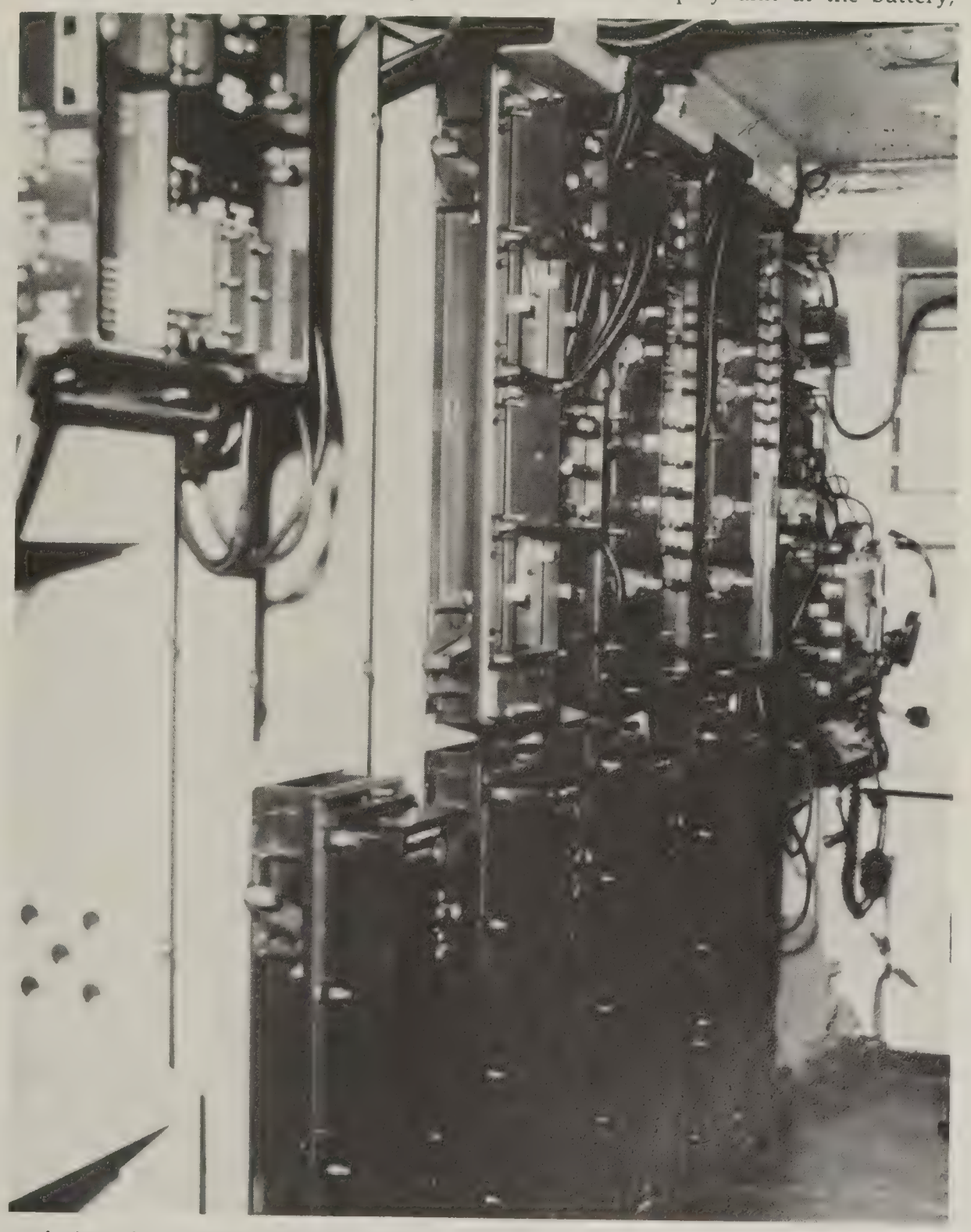
More than merely performing ballistic computation, Tacfire provides a completely integrated communications system based on the ranges that can be achieved by man-portable radios. Using radio or land lines and high-speed line printers, a forward observer's request for fire can be processed by the computer, reviewed by the battalion fire direction officer and sent to the relevant battery in a few seconds' time.

The forward observer communicates with the computer via the AN/PSG-2 digital message-entry device (DMD), using a standard format that takes only 1.3 seconds to transmit, greatly reducing the observer's vulnerability to enemy radio location.

The Tacfire system is intended to perform these general fire control functions: fire support coordination; keeping track of ammunition stocks and status of weapons; storage and application of meteorological data; fire mission processing; fire planning; target intelligence processing; and the computation and use of survey data.

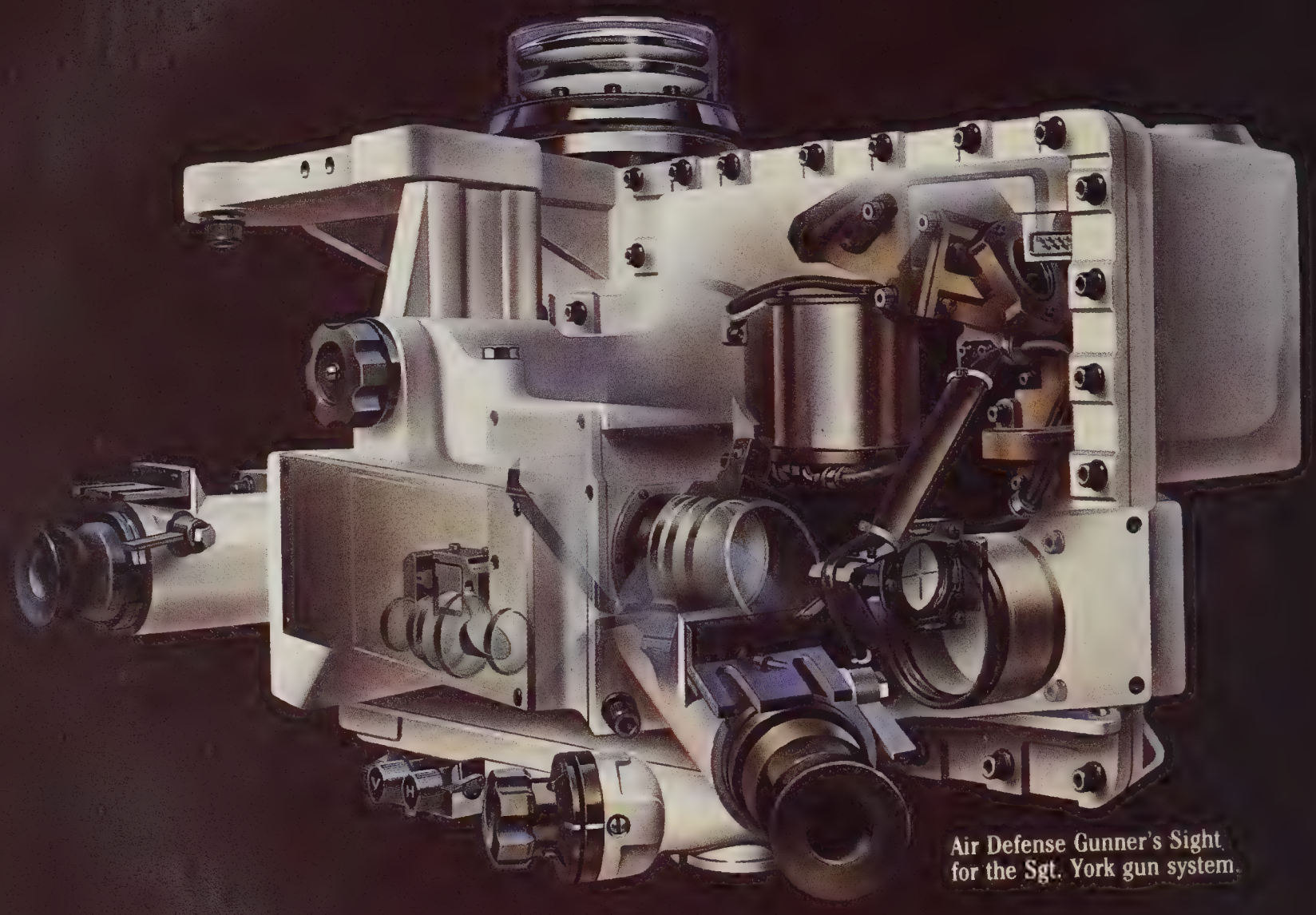
Tacfire has some built-in ability to assess target intelligence and discriminate between the quality of various reports. Confirmed targets can be read out of the computer by time of receipt, geographic area, quality of the source, type and size. The system can be programmed to generate automatic fire mission requests upon receipt and confirmation of intelligence data, according to guidelines chosen by the division artillery commander.

At division level, the system can handle all tasks for up to 100 fire units, including naval gunfire and tactical air operations, and include up to 30 of these in a single fire plan. It can store information on as many of 1,364 targets and display these according to as many as three standing requests. Mission fire commands are relayed from the battalion fire direction center to a display unit at the battery,



A view of the shelter-mounted processing group, Tacfire artillery fire direction system.

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e they are announced by voice. The
ver then confirms target effects with
attery by voice radio. Voice traffic,
ever, is being eliminated now that
attery computer system (BCS) has
ed service.

weak link in Tacfire is the lack of
ure, reliable communications net of
uate capacity. VHF (very high fre-
cy) FM radios are used in preference
e even less reliable high-frequency
ls, but they are limited to line-of-
operations, which inhibits their use
lly country and urban areas.

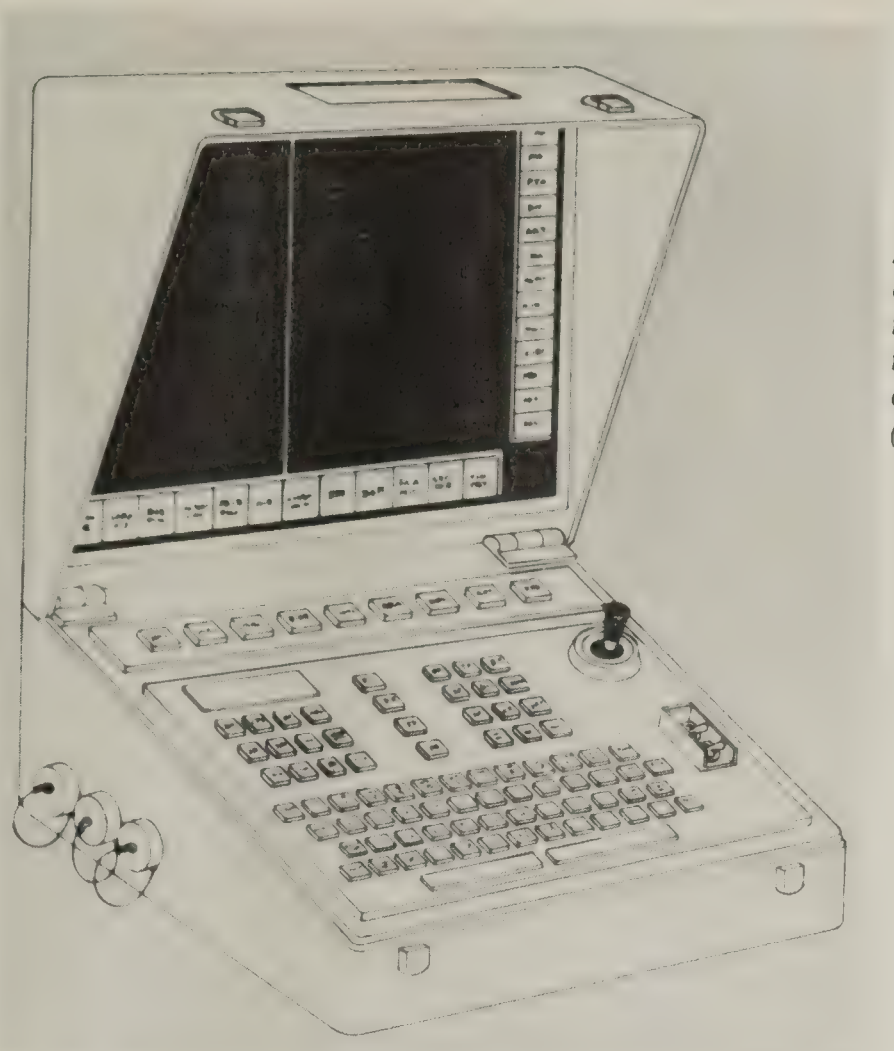
study by the Army's Materiel Sys-
Analysis Agency (AMSAA) con-
d that the elimination of message
s would improve the typical effec-
ess of Tacfire from 30 to 91 percent
number of missions fired and tar-
ngaged, in the percentage of target
sitions dealt with and in overall fire

rectify this situation, the Army is
oping a digital communication sys-
or fielding late in the decade, using
omponents of two other develop-
: the position-locating reporting sys-
PLRS) and the class II terminal of
int tactical information distribution
n (JTIDS).

combination is known as the PLRS/
Hybrid (PJH), employing the digi-
LRS user unit in a modified form
vill interface with the Tacfire DMD.
PLRS master unit will serve as the
ntrol for PJH, with all transmis-
going over the JTIDS terminals,
are small enough to fit in Army
nics shelters but too large to oper-
m backpacks or small trucks. JTIDS
les both ground and aerial stations
secure communications highly re-
to jamming and frees the net from
-sight limitations.

Army is buying 39 new lightweight
command terminals to be eval-
by the 9th Infantry Division (Mo-
d).

Data Systems Division of Litton



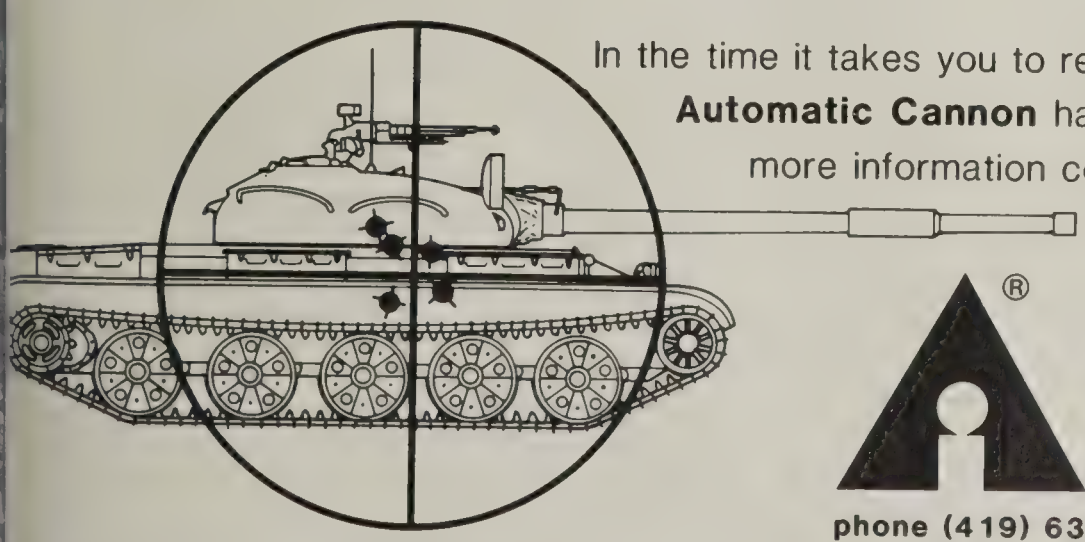
Artist's conception of a remote terminal for the advanced field artillery tactical data system (AFATDS).

Industries is the prime contractor for Tacfire.

■ **Advanced Field Artillery Tactical Data System (AFATDS).** The Army awarded Magnavox Electronic Systems Company a $23.7 million development contract running through 1987 for this artillery command and control system. A concept for modular improvement and an eventual successor to Tacfire, AFATDS seeks to capitalize on the rapid development of microprocessors (small computers) and peripheral equipment to create a modular system that brings the processing function down to unit subelements and key individuals. Processors, memories, input/output devices and communications modules would be pushed out into the field and arranged according to function.

A battalion fire support officer, for example, might have mounted on his vehicle a processor with one memory, a twin-radio communications module and two input/output devices that could be operated on board or remote from the vehicle, linked by secure radio or a fiber optic cable. With this outfit, he could perform his fire support coordination functions in real time while accompanying the supported unit without breaking the link to the processor. Other arrays could be tailored from the same components to suit other functions.

The main data base would still be stored in central processors in the fire direction centers (FDC) and would be accessible to other elements of the FDC, as well as field locations. With greater capacity than the field processors, the central unit would support the electronic



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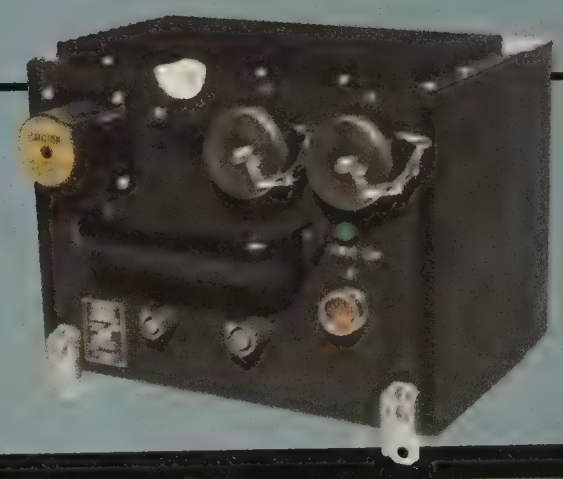
The U.S. Army has tasked the Hughes AH-64A Apache Advanced Attack Helicopter with a demanding computer systems job. Teledyne Systems Company is proud to be a part of the important Apache program by providing the MECA-43 Fire Control Computer.

When target information is acquired by the AH-64A sensor systems, it is passed on to the MECA-43 Fire Control Computer which automatically locates the target. Instantaneously, the FCC directs the weapons systems and displays steering and firing information. The result: rapid target engagement.

The heart of the sophisticated fire control system, this compact and powerful computer will automatically compute ballistic trajectories for all weapons onboard the Apache as well as monitor operating conditions of 14 subsystems.

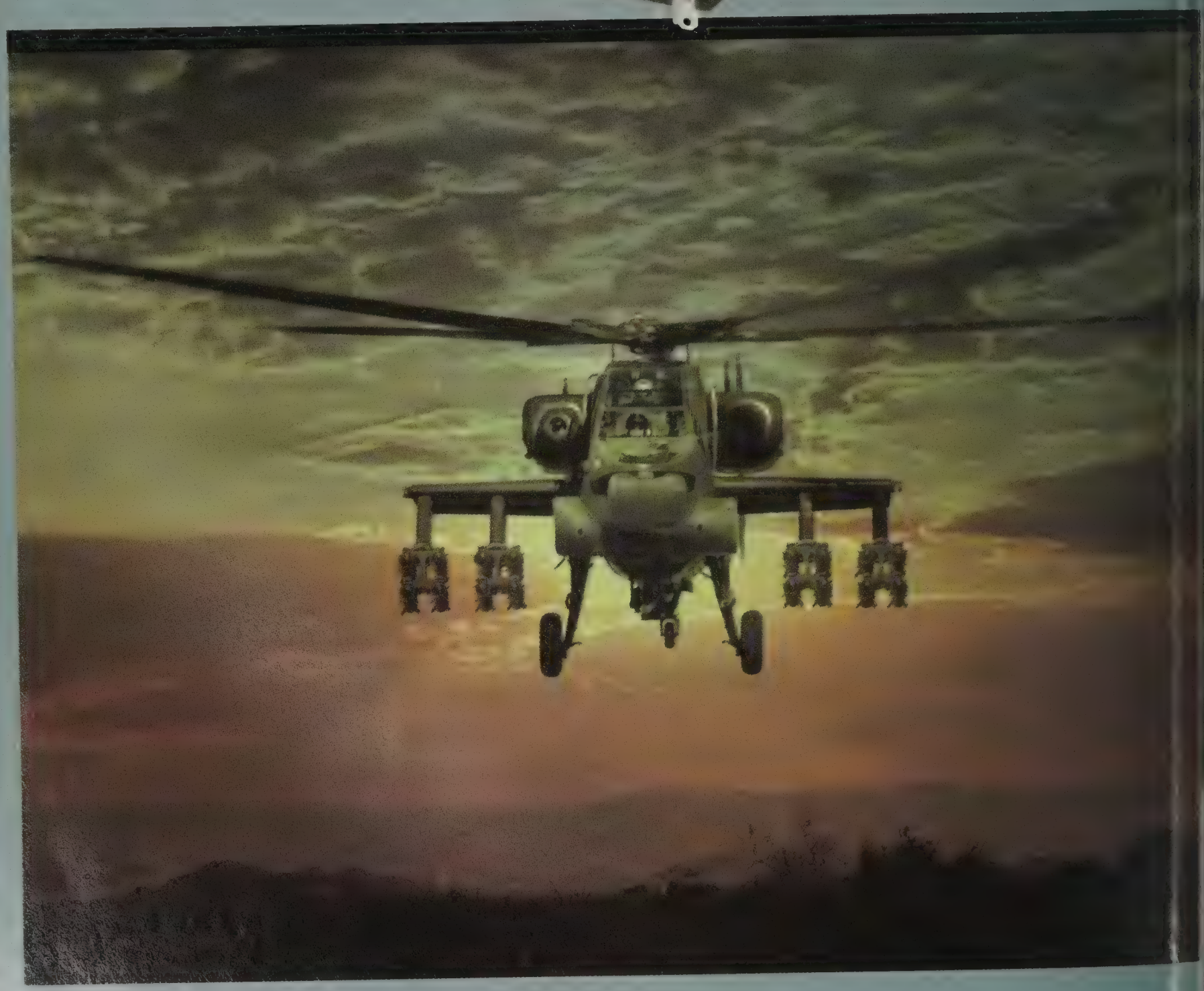
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e maps used in fire support planning coordination.

e Tacfire digital data terminals and nunications control unit lack the ca- required for AFATDS and would to be replaced by a new communi- ns management system compatible future transmission rates expected 10 or 15 times faster than today's. tware for the system will be written da," the DoD higher-order compu- nguage.

Battery Computer System (BCS). The as been developed by Norden Sys- and Marconi Space and Defense ns Ltd. to provide a completely au- ed fire control system at the field ry battery level. BCS is entirely atible with Tacfire and will provide communications between the bat- ommand post and individual weap- ncluding gun-display units that give ews direction, bearing and eleva- data. The system also establishes inks between forward observers and ttery, so that all voice communica- are eliminated, both within the bat- nd between the battery and other nts.

able of operating independently of e, the battery computer system can e technical and mission fire control itations for up to 12 weapons, in- g MLRS (multiple-launch rocket sys- ockets and "Lance" missiles, besides BCS is a replacement for the old C (field artillery digital automatic ter), a primitive set still carried on oks but not much used in practice. gress appropriated $49.5 million for the first 235 BCS sets in fiscal 1980–81 and $45.5 million for 217 sets in fiscal 1982. The Army bought 228 units in fiscal 1983–84, and Congress appropriated $29.5 million for 167 units for fiscal 1985. The Army holds options that could increase the total quantity to 1,286.

BCS entered service in late 1982, and fielding is now more than 30 percent complete.

■ **Firefinder Artillery/Mortar-Locating System.** Composed of two advanced phased-array radars—the AN/TPQ-37 artillery-locating radar and the AN/TPQ-36 mortar-locating radar—this system provides, for the first time in the history of field artillery, a truly effective means of locating enemy weapons. The Army has contracted for 72 AN/TPQ-37 sets, with an option for foreign military sales. The procurement of the AN/TPQ-36 mortar-locating radars was contracted for a total of 132 systems for the Army, 22 for the Marine Corps and again, a similar option to satisfy the requirement for foreign military sales.

The AN/TPQ-37 entered service in December 1980, while the AN/TPQ-36 was first fielded in February 1983. This latter system, operated by Army target acquisition specialists, proved highly successful in locating hostile artillery positions for Marine Corps forces in Lebanon in 1983.

The first contract award for the AN/TPQ-36 was in August 1978 with three additional awards, the last being in January 1981. The first unit went to U.S. Army, Europe, in February 1983 with continued fielding for the Army projected



BCS (battery computer system) terminal used in the field artillery battery command post.



The erected antenna of the AN/TPQ-37 artillery-locating radar.

for completion in the third quarter of fiscal 1989.

Both systems are products of Hughes Aircraft Company, chosen after competitive trials with other designs. Both are state-of-the-art, highly sophisticated pulse Doppler radars, with electronically steered beams to provide virtually continuous coverage, and both use advanced signal processing and computer-aided analysis to help pick up objects as small as a mortar shell.

Shell trajectories are automatically back-plotted to pinpoint the location of the firing weapons; the information is displayed at the operator's console and can be relayed to the Tacfire system by means of a data link. The system is capable of tracking large numbers of incoming shells and rockets, including volley fire. When harnessed to Tacfire, requests for counterfire can be on the way to the friendly guns before the first enemy round strikes the ground, a capability that has been demonstrated in testing.

Both radars have identical common operations control shelters, and the normal disposition on a division front will be two AN/TPQ-37s operating 10 to 12 kilometers to the rear and three AN/TPQ-36s within 2 to 4 kilometers of the

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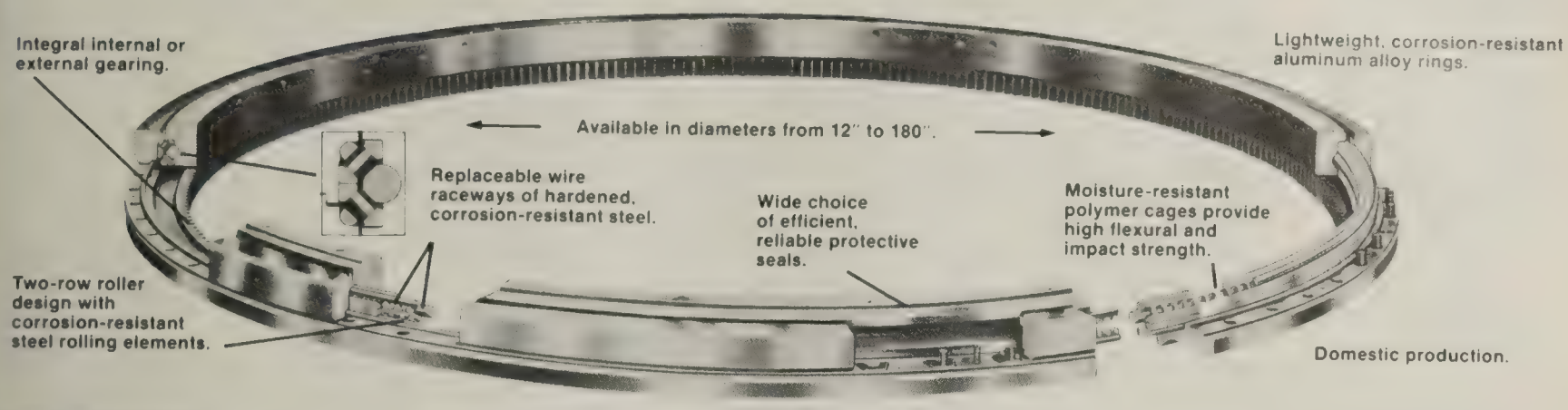
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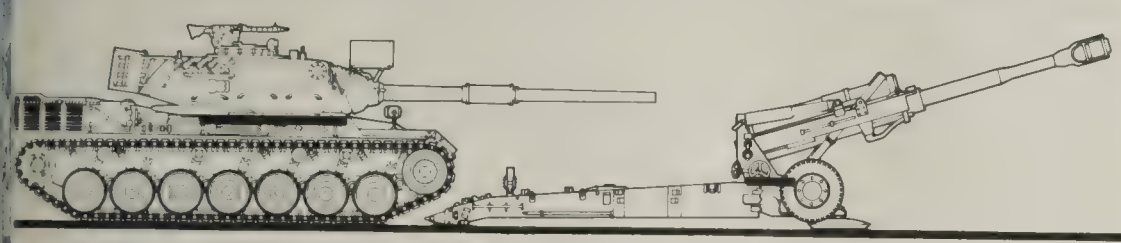
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eally suited for military applications, **rge-diameter Rotek Wire-Race™** bear-gs are rapidly becoming the standard for modern weapons. The new field-proven design assures better performance and unmatched reliability.

Rotek spearheaded development of large-diameter, combination-load bearings in this country. These "turntable" bearings have revolutionized design concepts. And have achieved a very commendable record in military applications.

Now, Rotek Wire-Race bearings: a significant advance in bearing technology.

The Wire-Race concept.
Like their solid race counterparts, Wire-Race bearings provide support for any combination of radial, thrust and tilting moment loads. But the new bearings use stainless steel inserts in the rings as raceways for the ball or roller elements. This seemingly simple design improvement makes these new bearings ideal for hostile military environments.



liability.
fore anything else, a military bearing mands reliability. There can be no com-mise. Rotek designs and builds military arings with this in mind. First, only the est corrosion-resistant materials are ed, including aluminum alloy rings and inless steel raceways and balls or roll-. Second, highly efficient, sophisticated aling designs prevent dust and other ntaminants from entering the bearing vity. Third, Rotek pursues a conservative proach to both design and capacity rat-s. Even after a vehicle has been stored a prolonged time, or operated without et rotation, it can be relied on to per-m *immediately* if equipped with a Rotek e-Race bearing.

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Wire-Race bearing weighs 60% to 70% s than other bearings. Result: weight ings of 150 pounds in a light reconnais-ce vehicle to 600 pounds or more in a vy tank. The significant weight reduc-results from the Wire-Race design a minimum section envelope and minum alloy instead of steel for support-rings.

Materials compatibility.
Anodized aluminum or cadmium-plated steel rings are generally used along with stainless steel raceways and rolling elements (balls or rollers). Differential thermal expansion rates are totally accommodated by the bearing design with no penalty on operational capabilities.

Better lubrication.
A light lubricating film is all that's necessary on Wire-Race bearings without risk of corrosion. Thus frictional torque is held to a minimum, particularly at low temperatures. Experience has shown that under most conditions these bearings can be operated for the vehicle's normal overhaul period (four years or more) without interim lubrication.

Now integrated U.S.A. manufacturing.
When you specify Rotek, you're specifying top-quality bearings from the only *fully integrated* manufacturer of Wire-Race bearings in the U.S. From our design engineering department to our new Ring Rolling facility to our ultramodern manufacturing plants, Rotek keeps giving you more.

The Wire-Race™ bearing is a precision bearing demanding advanced production techniques. Thus, the temperature-controlled Rotek plant in Northern Ohio features some of the most sophisticated bearing manufacturing equipment in the world.

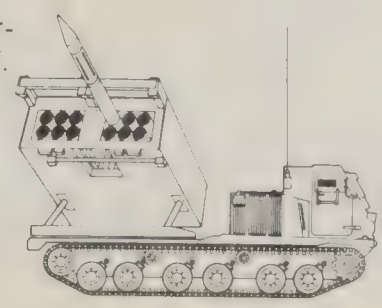
American-made expertise.
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- MARK 75 76mm Naval Gun Mount
- M2 and M3 IFV/CFV
- Marine Corps. LVTP7
- Improved TOW Vehicle Kit
- Roland Anti-Aircraft System
- MLRS (Multiple Launch Rocket System)
- DIVADS (Divisional Air Defense System)
- HSTV(L) (High Survivability Test Vehicle —Light Weight)
- FISTV (Fire Integration Support Team Vehicle)

Rotek also builds and rebuilds hardened steel bearings with solid raceways, such as those used on the M110 self-propelled gun and many other military vehicles. Rotek Wire-Race and hardened steel bearings are used on vehicles made by blue chip companies like AAI, Boeing, Bowen-McLaughlin-York, Emerson Electric, FMC Northern Ordnance, FMC Ordnance Division, Ford Aerospace, General Dynamics and Vought.

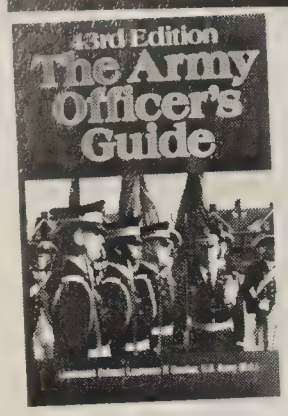
Both solid and Wire-Race bearings, either ball or roller type, are available in configurations to suit any requirements. Sizes: 12 to 180 inches.

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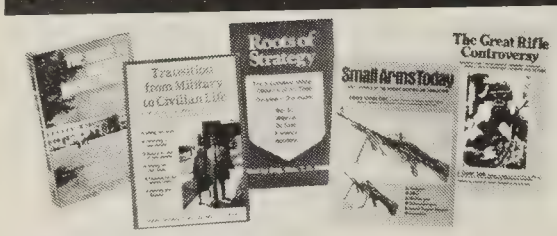
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The trailer-mounted antenna-transceiver unit of the AN/TPQ-36 mortar-locating radar.

front lines. The AN/TPQ-36 and the AN/TPQ-37 have replaced the much less capable AN/MPQ-4 mortar-locating radar, which had been in service since 1958.

■ **Remotely Monitored Battlefield Sensor System (REMBASS).** This is a modular, ground-based, all-weather, day and night battlefield surveillance system capable of detecting the movement of personnel and wheeled and tracked vehicles. Sensors process this data and provide detection or classification information. The data is incorporated into short digital messages and transmitted to a receiver by the sensors' internal VHF transmitters. Transmission is either direct or through radio repeaters. With this classification data, the commander can know what threat he is facing.

A production contract was awarded in April 1985 to the RCA Government Systems Division for the hand-employed version of REMBASS. The contracted quantities will equip six divisions, two separate brigades and one training establishment. Initial operating capability is scheduled for the second quarter of 1987.

Air-dropped and artillery-delivered sensors were originally included in the program, but lack of sufficient funding and the Army's desire to field production hardware as early as possible forced clusive concentration on the hand-e ployed system.

■ **Millimeter-Wave Communicati** The present inventory of radio equipm is generally vulnerable to electronic co termeasures. These line-of-sight (L radios usually are characterized by la obvious antennas. Alternative means communications in the face of high-th electronic warfare (EW) capabilities quire use of wire and cable systems. though cable systems offer greater munity to EW operations, their appl tion must be carefully considered respect to the particular battlefield s ation.

The development of millimeter-w (MMW) transmission is one of the ous new technologies being investig for use in performing C^3 (command, trol and communication) functions. M technology provides unique features w compel its consideration both in repl ment equipment and in supplemen equipment to existing systems. The ad tages offered by this technology, suc rapid deployment, high mobility, r mized radio frequency and visual si tures and wide bandwidth capability, applications to both tactical and stra



Equipment associated with the remotely monitored battlefield sensor system (REMBASS), including, in the center, the sensor monitoring set and the antenna mast.

ns. The development of MMW equip- with multichannel transmission bilities has the potential not only for te siting but also remote surveillance mation transfer, artillery communi- ns, special forces operations and co- C^3 for small armor units.

multitude of possible system devel- nts can be realized through exten- minor modification and simple re- aging. MMW technology provides extremely attractive advantages in evelopment of a wireless command concept, which will be evaluated this with the 9th Infantry Division (Mo- d). This operational concept may banded to the enhancement of a mo- ultielement weapon system by sub- ng a highly mobile, covert, MMW n for the interconnecting cables. candidate for this concept might be Hawk" air defense missile system; ver, many such systems might ben- om MMW enhancement.

IW technology promises to provide ecessary tactical communications ilities while interfacing with existing and cable equipment, as well as systems employing fiber optic tech- y. It is anticipated that many of the g tactical deficiencies will be mini- , if not totally eliminated.

iber Optic Technology. Fiber optic logy is expected to play a large n providing survivability of com- ations on the nuclear battlefield. troduction of fiber optics will also the vulnerability of communica- nd transmission to enemy jamming nterdiction and provide for high- transmission of a large volume of The technology eliminates electronic signatures and minimizes the effects of electronic warfare (EW) and electromagnetic pulse (EMP).

The Army is moving toward fielding the fiber optic transmission system to replace multichannel twin coaxial metallic cable in long-distance communication systems. This action addresses the durability, deployability and environmental issues that field operations raise for cable-based systems.

Although multimode fiber optic technology is being developed to replace conventional coaxial cable, challenges remain.

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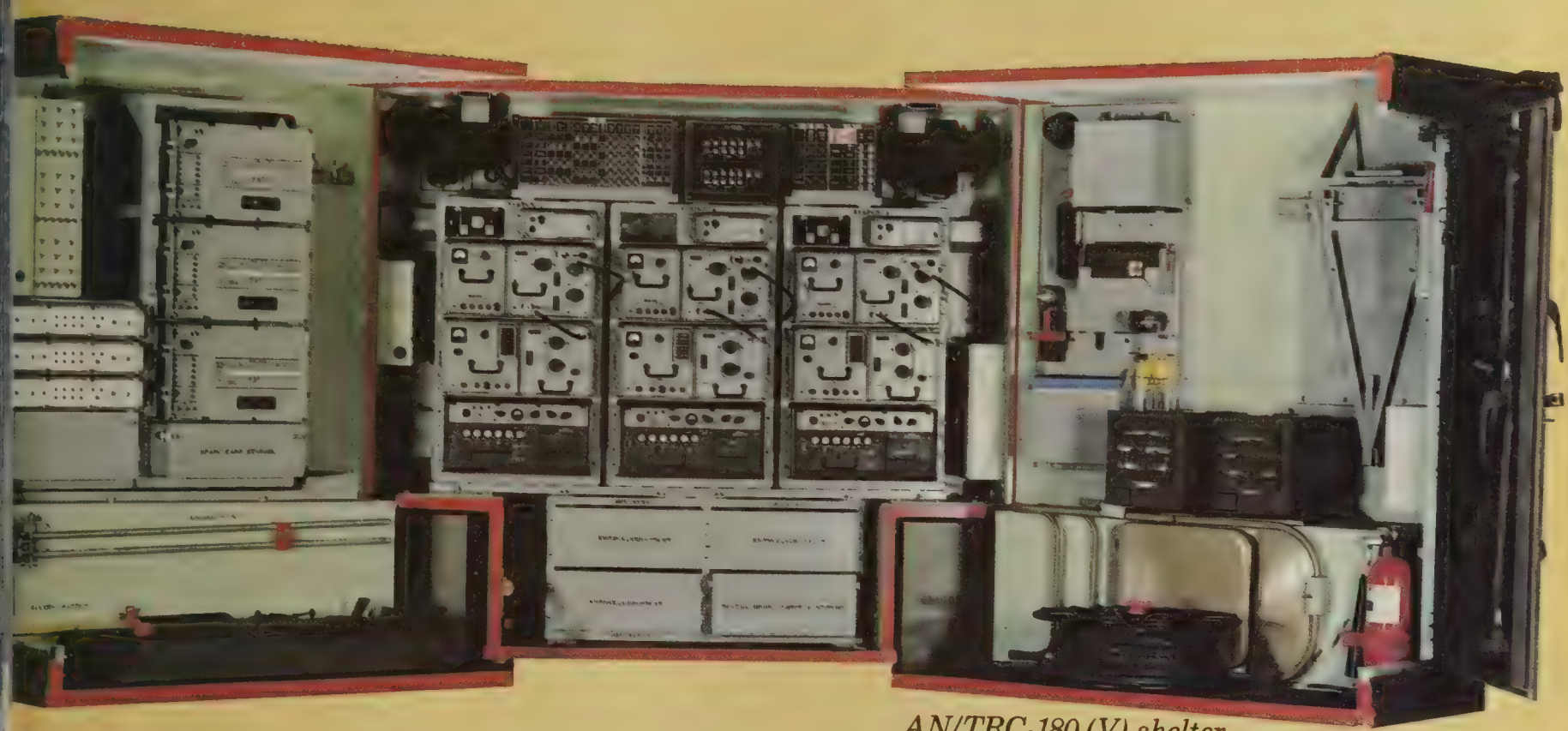


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AN/TRC-145 (V)



RADIO REPEATER SET
AN/TRC-113 (V)

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AN/TRC-180 (V) shelter, split to show equipment arrangement

anadian Marconi Company is proud to present its comprehensive upgrade for tactical radio relay elter-mounted terminals and repeaters. The existing tactical communication workhorses, the N/TRC-145 (V) Radio Terminal Set and AN/TRC-113 (V) Radio Repeater Set can now be updated become the AN/TRC-180 (V) Radio Terminal Set, which combines the features of both assemblies one multipurpose shelter, having greater capacity and complete flexibility for both radio and cable ks. Some of these features are:

- Three radio/cable/multiplex stacks, with 15 channels per stack, in any configuration.
- 30 channels available on one link.
- Flexible interfaces for each channel: analog or digital.
- Existing secure communication capability retained.
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- System BITE.
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Improved deployment methods using even lighter and smaller fiber optic cable can lead to "back-pack" multichannel capability. Efforts are under way to retrofit fiber optics to the bulky 26-pair cable now in use by the Army. Single-mode technology, now being exploited in commercial communications, can provide flexible voice-digital translation, able to adapt to varying signal formats.

Finally, fiber optics must be coupled with the computer as a battlefield force multiplier, through the exploitation of fiber optic local area networks.

■ **Packet Technology.** Packet technology has emerged over the last 20 years to provide a highly effective way to implement individual communications networks and to connect dissimilar networks into an internetwork, or "network of networks," to enhance the survivability of battlefield elements.

The advantages of packet switching are that a network, by handling packets (independent blocks of data) as opposed to user-supplied messages, can more readily adapt to changing battlefield cond tio Each packet can be routed, divert d, layed and acknowledged to provide m effective communications through s ing of finite channel resources.

Packet techniques are particularly fective for transmission of short or "bu messages, which make up most of typ battlefield communications. It is part larly well suited to implement over for conversion of conventional trans sions into the more efficient packet mat and for the interconnection of munications resources such as multic nel, satellite, SINCGARS and PJH thr packet-switched "gateways" to imp both interoperability and survivabil

■ **Guardrail V.** Guardrail V is an borne communications intercept and d tion-finding system deployed in light engined aircraft (RU-21Hs, or RC- for the improved system). Ground e ment includes a large integrated pro ing facility in four 40-foot vans a great deal of associated material an commander's tactical terminal lo with the field units.

Three systems have been fielde West Germany, South Korea and the tinental United States. Two produc proved versions have been deploye West Germany. Under a $126.5 m production contract awarded by the tronic Warfare Laboratory to ESL Sunnyvale, Calif., two Guardrail/ mon sensor systems (GR/CS) will b livered in 1988 and 1989.

The GR/CS program combines proved Guardrail V with Advanced Look (an electronic intelligence colle and classifying system) and the "co nications high accuracy airborne loc system" (CHAALS) to produce a signals intelligence system. (See als entry "Guardrail V Aircraft" in the ation Systems Command section.)

■ **Quick Fix.** Carried in a mo Black Hawk utility helicopter (desig EH-60A), this system provides ta electronic countermeasures and elec support measures. Quick Fix can int and jam radio communications s and also has a direction-finding and tion capability.

The prototype was developed f Army by ESL Inc., Sunnyvale, and a production contract for 56 sy has been awarded to Tracor Aero Austin, Tex. (See also the entry " Fix Helicopters" in the Aviation Sy Command section.)

■ **AN/TSQ-114A Trailblazer.** A g based system that provides intercep location of communications signals, blazer" consists of five stations. Ea tion is housed in a ballistically pr shelter mounted on an M1015 vehic ing a trailer with a 30-kilowatt power generator. The M1015 is th

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RC–12D aircraft, the platform for the Improved Guardrail V signals intelligence system.



EH–60A model of the Black Hawk utility helicopter, modified to carry more capable versions of the Quick Fix communications-locating and -jamming system.



The AN/TSQ-114A Trailblazer communications intelligence system is housed in the M1015 electronic warfare systems carrier (a version of the M548 tracked cargo vehicle) and employs a retractable 50-foot antenna mast, shown here fully extended.

vehicle used to carry "Tacjam" (see entry below) and has the same on-board power (used as a backup source in Trailblazer) and automatic ground rod driver. Each station uses a 50-foot hydraulic/pneumatic quick-erecting "Magic Mast" and modern receivers and computers.

The five stations are tied together with a data link, and very rapid determination of communications emitter locations is thus possible. Three of these systems have been deployed in U.S. Army, Europe. They replace three of the four AN/TSQ-114 "quick reaction capability" (QRC) systems fielded in 1980. ESL Inc., of Sunnyvale, Calif., is the contractor for the Army Signals Warfare Laboratory.

KING RADIO'S AN/VRC-86 THE LATEST WORD IN TACTICAL HF



The latest word in tactical HF is now in production and will be available to the U.S. Army later this year.

King Radio's AN/VRC-86 will provide U.S. Army ground forces with the advanced radios needed to maintain contact with helicopters flying nap of the earth (NOE) profiles.

What does the U.S. Army find so appealing about King HF? Several features make the AN/VRC-86 stand out. For one thing, it's easy to use—it operates with telephone-like simplicity. Another advantage is the complete functional and operational compatibility with its airborne counterpart—King Radio's AN/ARC-199 (also in production for the U.S. Army). And because both radios share common parts, the army reaps substantial cost savings on logistical support. The radio also provides installation flexibility which allows it to be installed in either a fixed location command post or mounted in any number of Army vehicles. It can even be operated by remote control by removing the CDU from the mounting and moving it up to 350 feet from the radio itself (a precaution which may be warranted in certain threat environments). And, of course, there is the ruggedness and reliability associated with King equipment.

Using four microprocessor chips, the AN/VRC-86 is able to automatically scan up to 20 preset channels and will then break squelch only when it receives a transmission containing its unique address. Add to this feature selective squelch, BITE, selectable power output, secure voice and data compatibility plus the growth potential for frequency agility, frequency link analysis, automated communications and electronic operating instructions—and you have the capability for a truly ADAPTIVE HF SYSTEM.

Since winning the initial Army contract to build these two radios, King Radio's successes in tactical HF have gone unnoticed. Another HF contract has come our way—this time to build an advanced HF for use in the rugged operational environment of tactical fighter aircraft. King is producing this radio, the AN/ARC-200 (a derivative of the AN/ARC-199), for use in the RAAF version of the F/A-18 strike fighter aircraft.

If King's tactical HF story interests you either from the standpoint of off-the-shelf products or adaptations of the systems we are building, contact: Director, Special Programs Department, King Radio Corporation, 400 North Rogers Road, Olathe, Kansas 66062. (800) 255-6243. Telex WUD (0) 4-2299. Cable: KINGRAD.

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AN/PRD-10 man-portable radio direction-finding system.

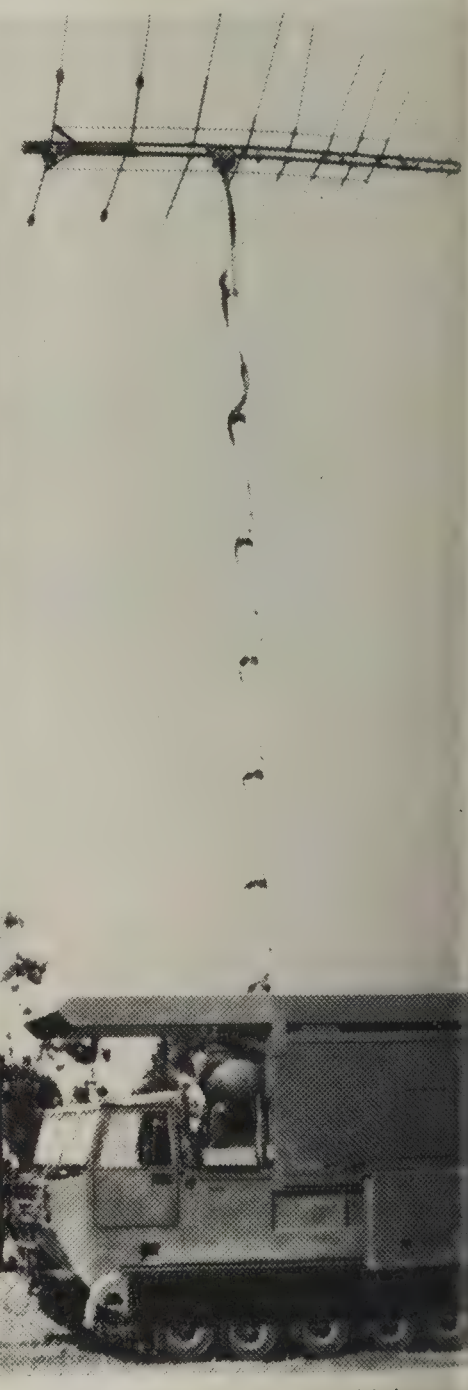
■ **AN/PRD-10 Man-Portable Radio Direction-Finding System (MRDFS).** The MRDFS is a lightweight, quick-erecting communications intercept and locating system used by the Army and Marine Corps. Each system consists of four identical stations, each having the capacity to function as the net control station (NCS) or as a slave station; each can also operate independently.

The system intercepts transmitted signals in both very high and ultra-high frequency ranges. It also performs VHF d rection finding.

The system was developed and pr duced by the Watkins-Johnson Compar of Gaithersburg, Md. Twenty syster were fielded in early 1985 to Forces Cor mand quick reaction units.

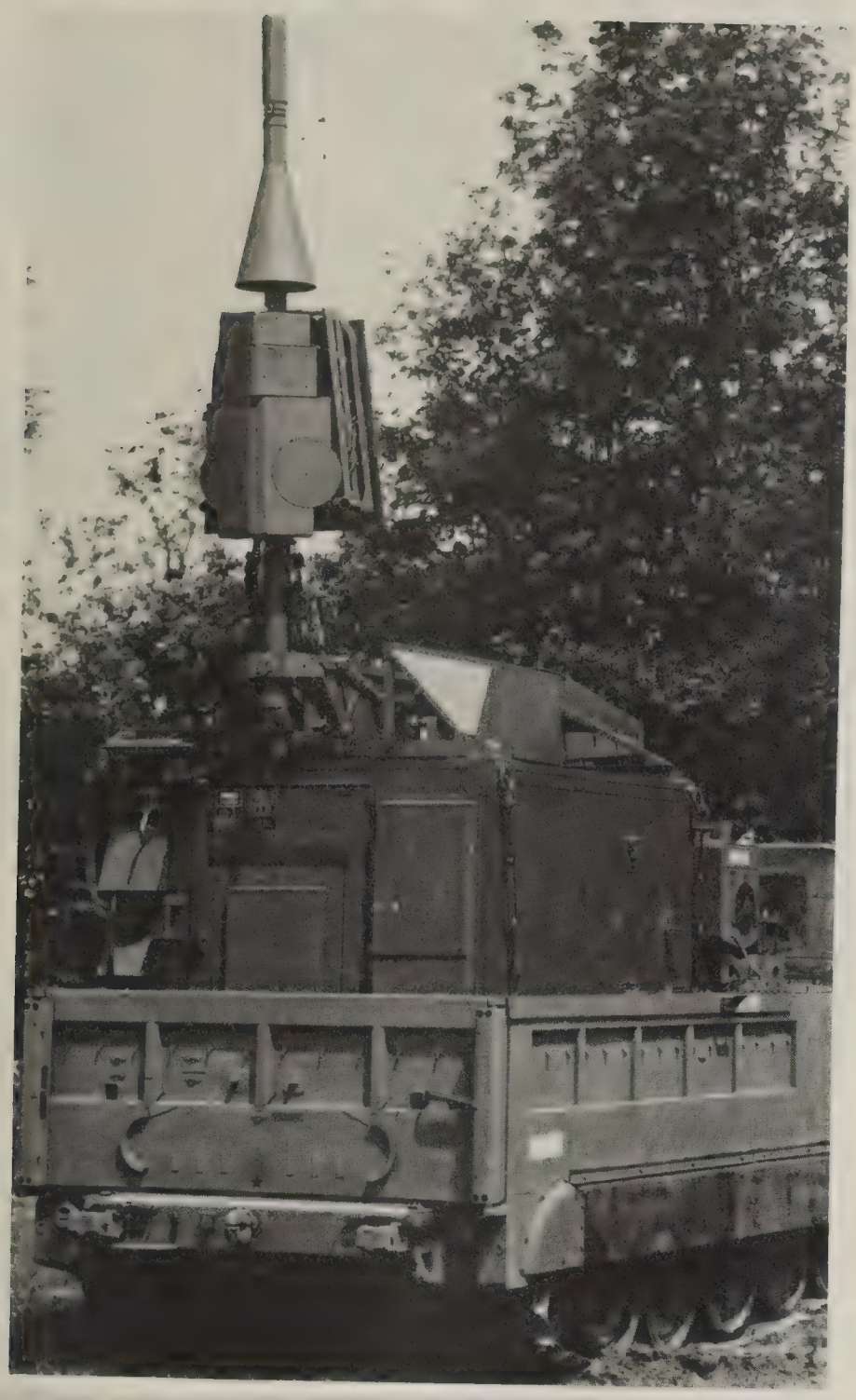
■ **AN/MSQ-103A Teampack.** A groun based, mobile emitter identification an location system used to identify surve lance, air defense and counterartille radars, "Teampack" is installed in S-630/G ballistically protected shelter a can be carried by a tracked vehicle or 2½-ton truck. It is produced for the El tronic Warfare Laboratory by the Em son Electric Company of St. Louis, M

■ **AN/MLQ-34 Tacjam.** This is a hig power, ground-based communications ja mer that can generate three simultaneo but independent jamming signals. Tacja is mounted on a modified M548 track cargo carrier, now designated the M1C electronic warfare systems carrier. Se eral innovative features aid in quick setting up and tearing down the syste an on-board power generator, autom



The AN/MLQ-34 Tacjam high-powere communications jammer with its 3 foot mast extended.





The AN/MSQ-103A eampack radar-locating system is oused in a ballistically protected elter carried on a acked vehicle, as re, or on a truck.

ic ground rod driver and a 37-foot quick-erecting pneumatic antenna mast.

Inside the shelter are three liquid-cooled transmitters, a control computer, receivers, operator interfaces and communicators' equipment. Twelve systems have been fielded in Europe and two with Forces Command. The current contractor for the Army Signals Warfare Laboratory is American Electronic Laboratories Inc., of Colmar, Pa.

■ **AN/TLQ-17A Traffic Jam.** A medium-powered transportable jammer that disrupts hostile communications in the high and very high regions of the spectrum, "Traffic Jam" is installed in M151 jeeps and helicopters (as Quick Fix—see entry above and in the Aviation Systems Command section). The equipment is also being modified for carriage in the CUCV (commercial utility cargo vehicle).

One hundred and twelve systems have been fielded in Europe, South Korea and with Forces Command. The prime contractor is Fairchild-Weston Systems Inc., of Syosset, N.Y.

■ **AN/PVS-6 Miniaturized, Eyesafe, Laser Infrared Observation Set (MELIOS).** MELIOS consists of a range finder, tripod, battery, carrying case, shipping case and lens cleaning kit. The laser range finder, which weighs less than three pounds, can be hand held to pinpoint the range of targets between 80 and 4,000 meters. The total package weighs less than five pounds.

Needed for infantry troop leaders, the AN/PVS-6 weighs and costs less than the AN/GVS-5 laser infrared observation set, which is used by artillery forward observers. The Army's Night-Vision and Electro-



AN/TLQ-17A Traffic Jam medium-powered communications jammer is usually installed in an M151 jeep towing a trailer-mounted erator; essentially the same equipment is used in the phase one versions of the airborne Quick Fix system.

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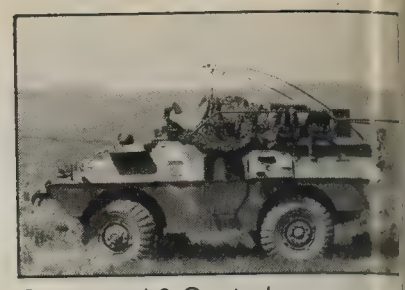
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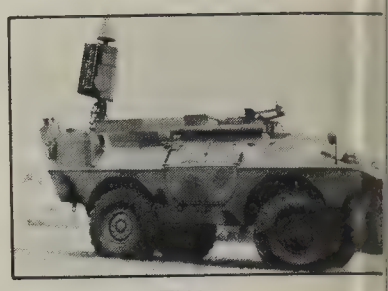
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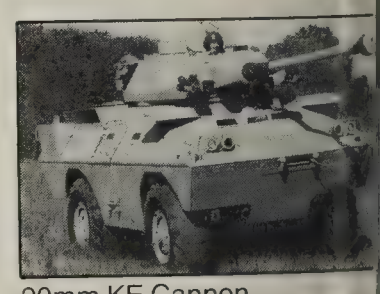
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AN/PVS-6 MELIOS (miniaturized, eye-safe, laser infrared observation set).



AN/AVS-6 ANVIS (aviator's night-vision imaging system) goggles.

:s Laboratory is evaluating two dif- technology approaches developed, :tively, by the Hughes Aircraft Com- s Electro-Optical and Data Systems p of El Segundo, Calif., and the -Electronic Corporation of Dallas, Tex. mpletely safe to the naked eye, eight of each type are being produced for ıced engineering development. First is scheduled for fiscal 1990.

■ **AN/AVS-6 Aviator's Night-Vision Imaging System (ANVIS).** This is a lightweight, high-performance, third-generation passive image intensifier device designed to aid helicopter pilots during night takeoff, landing and nap-of-the-earth flying at altitudes under 200 feet and at speeds up to 150 knots. The total system—a binocular device with mount and battery pack—weighs two pounds.

The AN/AVS-6 has a 40-degree field of view and an 18-mm sensor. It can be powered by available aircraft power or a backup 2.7-volt battery. Produced by ITT and Varian for the Night-Vision and Electro-Optics Laboratory, it was scheduled to be fielded in June 1985.

Army Laboratory Command (LABCOM)

LABCOM was activated on 1 October as the Army Materiel Command's (AMC's) newest major subordinate command. The purpose of LABCOM and its approximately 4,000 employees is to focus and integrate technology across mission areas to gain timely, cost-effective, survivable material for the Army.

Specifically, LABCOM's objectives are to perform and manage basic and exploratory research, establish the feasibility of new concepts and assure their timely transition so that applications can be undertaken by other AMC major subordinate commands and centers.

LABCOM consists of the Army Research Office, the Materials and Mechanics Research Center, the Atmospheric Sciences Laboratory, the Ballistic Research Laboratory, the Electronics Technology and Devices Laboratory, Harry Diamond Laboratories, the Human Engineering Laboratory and the Office of Missile Electronic Warfare.

The mission of each of the new command's eight elements is described below:

■ **Army Research Office (ARO),** Research Triangle Park, N.C. This office administers the basic research which increases knowledge and understanding of identified military problems—program element 6.1 of the Army budget. ARO performs research in mathematics and in the physical, engineering, atmospheric, terrestrial and biological sciences. It also administers the Army junior science and humanities symposia program and the Army science conference.

■ **Army Materials and Mechanics Research Center (AMMRC),** Watertown, Mass. This center leads AMC in materials, solid mechanics and materials testing technology. It provides advice and technical assistance on materials and mechanics to other AMC elements, exchanges technical information with other government agencies and the scientific community and conducts malfunction analyses of Army material.

■ **Atmospheric Sciences Laboratory (ASL),** White Sands Missile Range, N.M. This laboratory performs research in artillery meteorology, electro-optical climatology, atmospheric optics data and atmospheric characterization. It provides the field Army with weather intelligence and atmospheric systems; atmospheric effects for the design and development of

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The X-13 "Vertijet", designed and built for the U.S. Army in 1957, was the world's first pure jet V/STOL aircraft. And it followed earlier experimental aircraft including the YO-51 "Dragonfly".

U.S. Army Air Defense training teams used the family of Firebee-Towbee (MQM-34D) aerial target systems to hone their skills. And today's U.S. Army association includes the AH-64A Apache attack helicopter for which Teledyne Ryan Aeronautical builds the entire fuselage, major flight structures and components.

It's a living testimonial to teamwork that's shared today, after nearly a half-century, between the U.S. Army and Teledyne Ryan Aeronautical.

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Ballistic Research Laboratory (BRL), deen Proving Ground, Md. This la- ory advances ballistics technologies provides ballistics data covering the range of weaponry from small arms mmunition through large missiles to ar weapons and their effects. BRL s specific military problems related llistics and vulnerability through ex- tory development and manages vul- ility and lethality detachments.

Electronics Technology and Devices atory (ETDL), Ft. Monmouth, N.J. laboratory develops the basic elec- : "building blocks" needed for the tional requirements of future Army ns. It conducts research and devel- nt efforts in microelectronics, com- lisplay devices, microwave and mil- r-wave devices, power sources, fre- y control and filter devices, electron and high-power pulsers and sub- ns. In addition, ETDL is the Army's pal manager for the Department of se very high speed integrated cir- (VHSIC) program.

Harry Diamond Laboratories (HDL), hi, Md. HDL specializes in elec- tronic fuzing, nuclear weapons effects, radar/signal processing and antiradiation missile countermeasures and is involved in the development of sensors for "smart" munitions. Under the sponsorship of the Defense Nuclear Agency, it operates "Aurora," the world's largest full-threat gamma radiation simulator, to test the nuclear vulnerability of entire weapons systems. For more than 30 years, it has provided electronic fuzing for artillery projectiles, rockets, mortars and missiles.

■ **Human Engineering Laboratory (HEL)**, Aberdeen Proving Ground, Md. This laboratory specializes in human factors engineering; that is, the science of taking people into account during the design and modification of weapons and equipment. Integrating these factors into AMC's development programs ensures that materiel conforms with the capabilities and limitations of the fully equipped soldier in combat. HEL is AMC's lead laboratory in the area of robotics, military operations in urban terrain and "soldier-machine interface."

■ **Office of Missile Electronic Warfare (OMEW)**, White Sands Missile Range, N.M. This office determines the vulnerability of Army weapons and communications-electronics systems to hostile electronic warfare and recommends techniques to reduce these vulnerabilities. OMEW uses engineering evaluations, laboratory investigations, computer simulations and field tests to assess typical electronic countermeasure threats and then helps project managers develop counter-countermeasure techniques. OMEW operates a modified Air Force NKC-135, dubbed "Big Crow," as an airborne electronic warfare platform.

* * *

■ **Very High Speed Integrated Circuit (VHSIC) Technology.** The Army's Electronics Technology and Devices Laboratory at Ft. Monmouth, N.J., is responsible for the Army's portion of the Department of Defense's VHSIC program. The object of this two-phase program, which began in May 1981 and will end in October 1988, is to develop incredibly small microchips in the most advanced and "smartest" weapons systems yet.

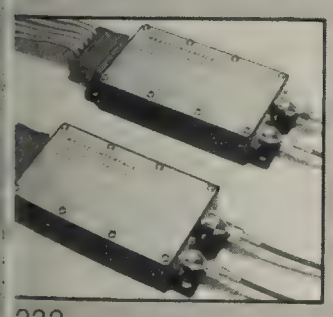
During VHSIC's first phase, six prime contractors have been developing the semiconductor technology that best matches a specific chip set. They are Honeywell Inc., Minneapolis, Minn.; Texas Instruments Inc., Dallas, Tex.; TRW Inc., Redondo Beach, Calif.; IBM Corporation, Manassas, Va.; Hughes Aircraft Company, El Segundo, Calif.; and Westinghouse Electric Corporation, Baltimore, Md.

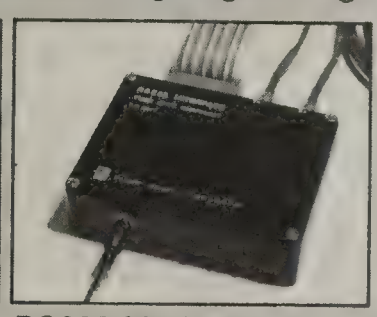
After an investment of $300 million to

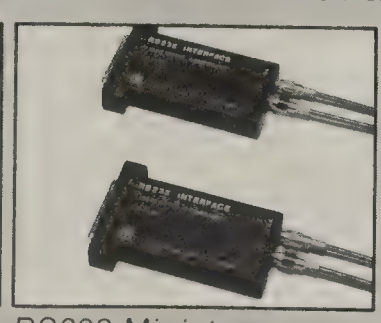
Fiber Optic Links for C³I

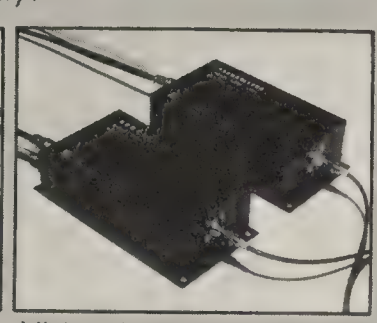
COMMAND, CONTROL, COMMUNICATION AND INTELLIGENCE

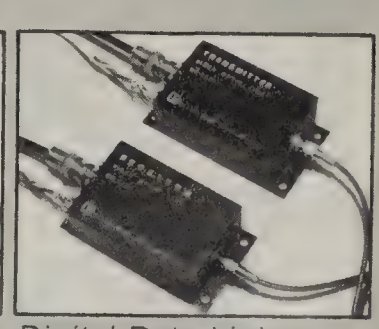
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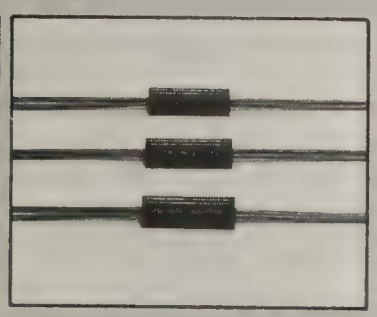

RS232 Modem

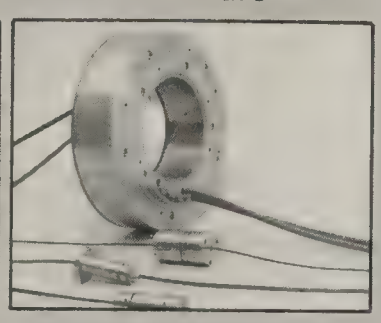

RS232 Miniature


Video Links

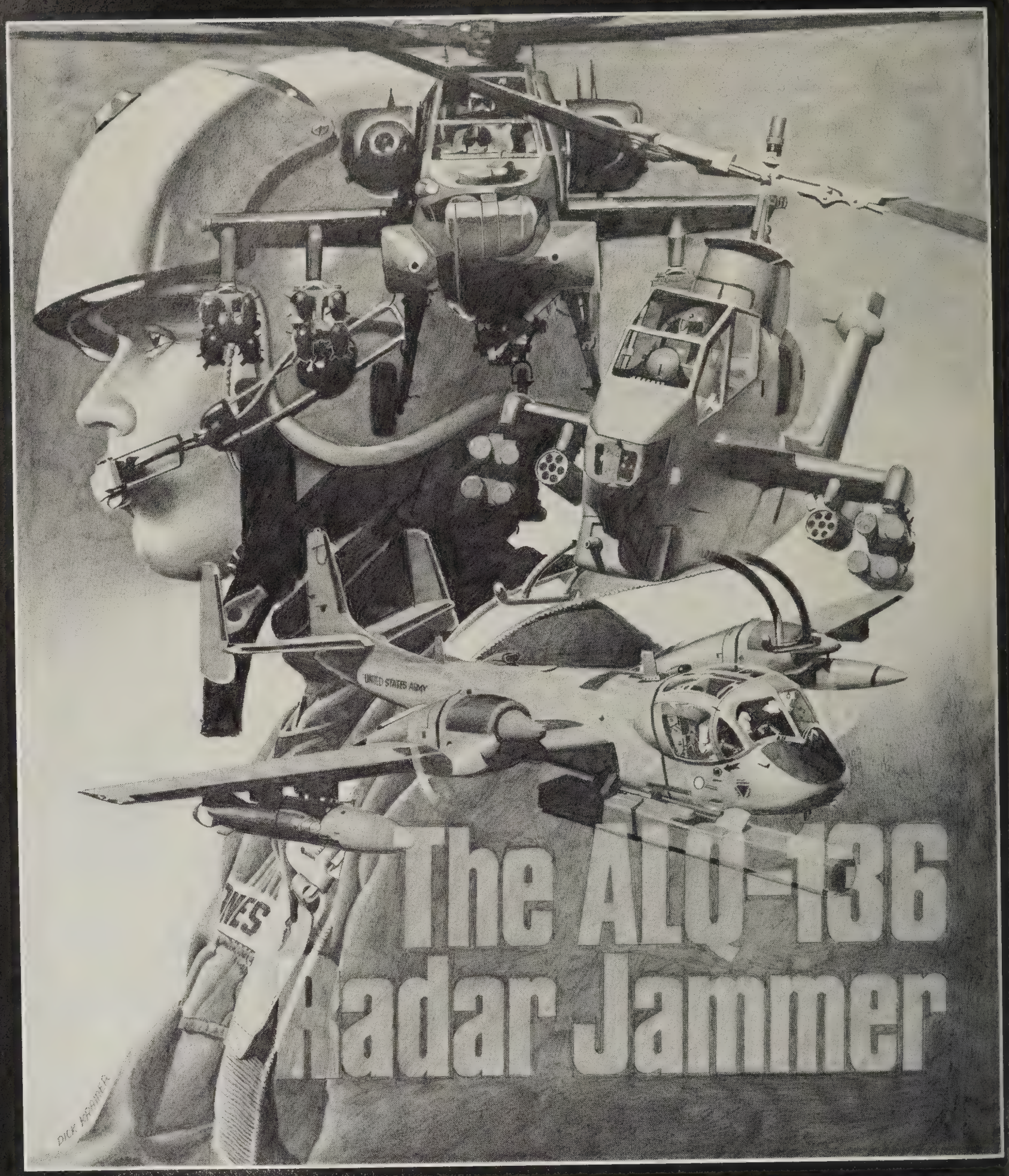

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, the chips produced by these firms ready to be fitted into their host sys-. According to ETDL spokesmen, the ces they are delivering "consistently t and often exceed all performance ifications called for by the Depart- t of Defense's minimum figure of t." Each chip set contains a signal essor and supporting integrated cir-. Their computational rate is ten s faster than that available in com- ial microcircuits.

uring phase one, the goal is to reduce ure" sizes down to one and one- ter micrometers—one-twentieth of thickness of a human hair. During se two, the goal is to reduce the size n to one-half micrometer, represent- the next generation of capability.

Missile Command (MICOM)

ne 8,000 civilian employees and 500 iers of the Missile Command manage Army's missile and rocket program. r major responsibilities include re- ch, development, procurement and inued support of weapons systems they achieve operational status with y units worldwide. The command manages all sales of Army missiles rockets to friendly foreign nations. ost of the command's people and its quarters are at Redstone Arsenal, The 38,000-acre home of Army mis- includes flight test ranges, labora- s and other specialized buildings and pment with a total investment value ore than $525 million.

tivity in MICOM's Research, Devel- ent and Engineering Center (formerly Army Missile Laboratory) is bringing weapon system concepts to a point e they can begin engineering develop- with high confidence in the pro- d costs and schedule.

ch efforts are essential to support 's "fast track" development—cycles ur years or less—of new systems. in-house development of fiber optic d-missile technology typifies the ef- Another major undertaking at MI- is the innovative use of existing onents and subsystems to provide fighting capabilities for the soldier. xample is "Setter," MICOM's candi- for a new light air defense system, ich hypervelocity rockets developed use have been combined with the d Stinger missile, with the fire unit ted on the new high-mobility 1¼- ruck.

* * *

TOW Heavy Antitank Missiles. The (tube-launched, optically tracked, guided) missile is vehicle mounted or portable and is the free world's pri-mary and perhaps most powerful antitank weapon.

TOW's primary mission is to destroy armor, but it is also employed against bunkers and crew-served weapons and has a limited self-defense capability against helicopters.

With a range of 3,750 meters, TOW receives automatic corrections in flight through two thin wires that unwind from the missile and link it to the launcher.

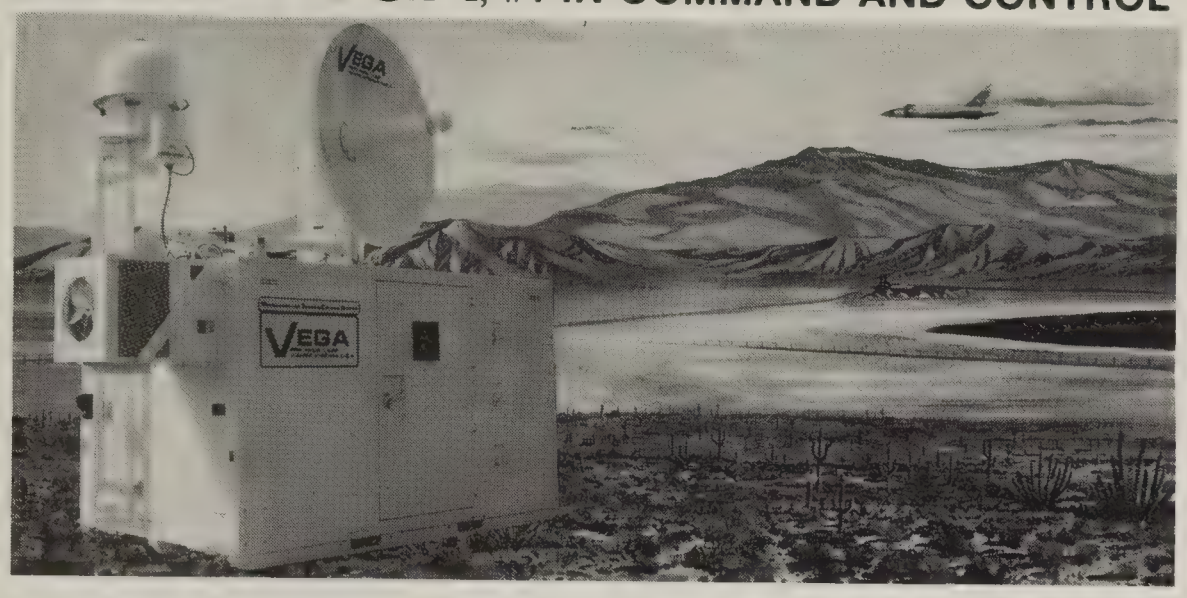
The TOW program consists of the basic TOW, Improved TOW (ITOW) and TOW 2. TOW 2 is a major improvement to the Army's basic TOW and will counter more sophisticated enemy armor with its new six-inch warhead, new two-stage, solid-propellant motor and improved guidance system. The TOW 2 launcher can fire basic, ITOW and TOW 2 missiles.

Basic TOW has been fielded with the Army since 1970, and has since been adopted by the Marine Corps and 34 foreign countries. ITOW retrofit and production is completed for the Army and Marines and is under way for 16 foreign governments. TOW 2 is in its third production year and has been deployed to the domestic training bases, Europe and South Korea. Sales cases are also being processed for six foreign countries.

The two-phase TOW improvement pro-

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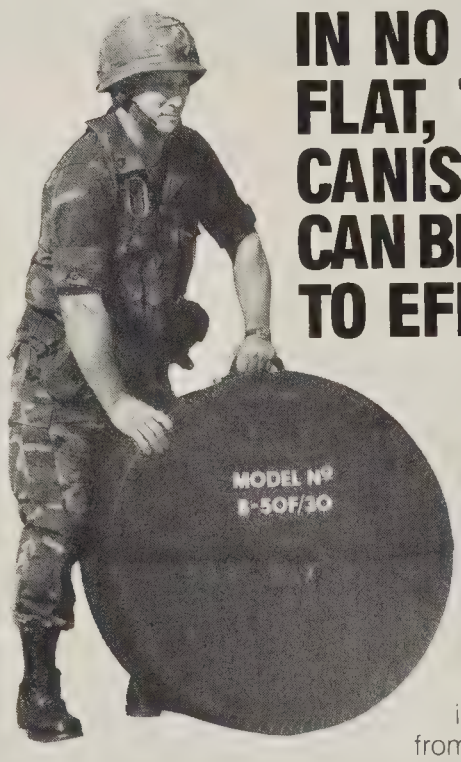
TOW 2 heavy antitank missile launcher on the ground tripod mount.

gram began in 1979. Phase one, to m current and near-term threats, produ ITOW, fielded in March 1981, its proved five-inch warhead fitted with extensible probe.

Phase two, to meet future armor thre produced TOW 2, which included a inch warhead with extensible probe improvements to the missile guidance tem enabling the gunner to track thro smoke, fog and other battlefield obs ants. The first production TOW 2 u were delivered to the Army in May 1

■ **Dragon Medium Antitank Mis** "Dragon" is a medium-range (1,000 ters), wire-guided antitank missile tha placed the 90-mm recoilless rifle. It vides an accurate, man-portable, t fighting weapon at platoon level. D on's lethal striking power makes it p ble for a single infantryman to chall armored vehicles, fortified bunkers, crete gun emplacements and other "h ened" targets. Because of its light we Dragon is particularly desirable in borne and airmobile operations.

Dragon employs a command-to- of-sight guidance system and consis



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Dragon medium antitank missile launcher.

two main items: a reusable tracker and a disposable round. The round is the term used to describe the launcher and missile, which are prepackaged as one unit in production. The missile and launcher weigh about 30 pounds.

The Dragon features a unique propulsion system, 30 pairs of small solid rocket motors mounted in rows around the missile body. The motors provide three functions: they counteract the effects of gravity, they guide the missile, and they act as sustainers to accelerate the missile.

The gunner tracks a target with an optical sight. The missile automatically receives steering commands from an electronic mechanism on the launcher, sent through hair-thin wires that unwind from the missile as it flies to the target. The warhead is a conventional shaped-charge type.

The planned quantities have been bought for the Army, which has deployed Dragon worldwide. Dragon is also used by the Marines and several allied nations. A special night sight allows the missile to be fired at night and during periods of reduced visibility.

■ **Advanced Man-Portable Weapon Systems.** This program involves the development and acquisition of advanced light multipurpose and medium antitank weapons which will replace the M72A3 LAW (light antiarmor weapon) and Dragon with more cost-effective systems having higher hit and kill probabilities.

These weapon systems include:

■ The Swedish-designed and -built AT4, a single-shot, recoilless 84-mm gun with disposable launcher. The AT4 is 40 inches long, weighs 15 pounds and has a range of 500 meters. The AT4 is being evaluated for possible Army and Marine Corps use. Honeywell's Defense System Division has a licensing agreement with FFV Ordnance of Sweden to produc AT4 in the United States.

■ The M72E4, a product-imp version of the M72A3 rocket, fea longer range and higher lethality a lightly armored vehicles, as well improved sighting system. These a tages have been achieved in a seven-p system with only a three-pound, thre increase in weight and length ove basic M72. The M72E4 is a candid replace the M72A3 LAW.

■ The advanced antitank w system-medium (AAWS-M) will b veloped to replace the Dragon an dress the deficiencies of that system WS-M will have the growth poten counter all evolving armor threats tactical system will consist of a (missile and throwaway launch tub a reusable command launch unit (The CLU will include a day/night and be capable of operating for s



The Swedish AT disposable recoi gun is being ev ated as a LAW antiarmor weapo replacement unc the light, multip pose phase of t advanced man-p able weapon sy tems program.



The M72E4, an improved version of the current M72A3 launcher, was evaluated ag the AT4 in the program to find a LAW (light antiarmor weapon) replacement.



On the point of striking a tank target is this experimental fiber optic-guided missile (FOG-M), one of several successful test flights in the current Missile Command research and development program.

s before replacing consumable items, as batteries.

ne AT4 has completed operational ng at Ft. Benning, Ga. A production sion in-process review is under way. M72E4 completed part of its qualifi- on testing at Redstone Arsenal, Ala., a rocket motor failure has caused the heduling of user testing to January . AAWS-M is in the concept explo- n phase.

Fiber Optic-Guided Missile (FOG- FOG-M will enable soldiers to fire hidden and protected positions and e and destroy tanks and other bat- ld targets at long ranges.

OG-M is the brainchild of MICOM's y Missile Laboratory (now the MI- M Research, Development and Engi- ng Center) and was designed and almost entirely within laboratory ities at Redstone Arsenal, Ala.

ne MICOM team has built a proto- missile and coupled it with a video m that can find, hit and kill tanks. Key to the system is the fiber optic cable that resembles a fishing line and pays out behind the missile in flight.

FOG missiles are launched vertically for approximately 200 meters and then programmed to pitch over to level flight. The low-cost TV seeker mounted in the nose of the missile sends pictures over the cable to the gunner looking at a video screen. Pictures of the battlefield and missile guidance commands are transmitted over the same link.

The safely concealed gunner at his ground station can survey the battlefield, select a target and activate an automatic tracker or, if preferred, manually fly the missile into the target.

The MICOM team is about halfway through a research and development program and has had several successful flight tests.

Once operational, a vehicle like the Army's high-mobility, multipurpose wheeled vehicle (HMMWV) would carry a computerized command post, as well as about ten missiles in canisters.

■ **Hellfire Helicopter-Launched Antitank Missile.** Hellfire is an antiarmor weapon that is guided by a laser seeker and is the main armament of the Army's AH-64A Apache attack helicopter. The missile homes on a laser spot that can be projected on the target by ground observers, other aircraft or the launching aircraft's own designators.

Although the laser seeker is the first type to be developed for Hellfire, the missile was designed to accommodate other seekers as technology evolves. The missile weighs approximately 99 pounds, is 64 inches long and has a seven-inch-diameter warhead.

MICOM's ground laser designator (GLD) program consists of two designators for use with laser-guided munitions, such as Hellfire, and laser spot trackers of both the United States and NATO countries.

The ground-vehicular laser locator-designator was designed initially for ground mount on a tripod but is being integrated



An Apache attack helicopter launches a Hellfire antitank missile.

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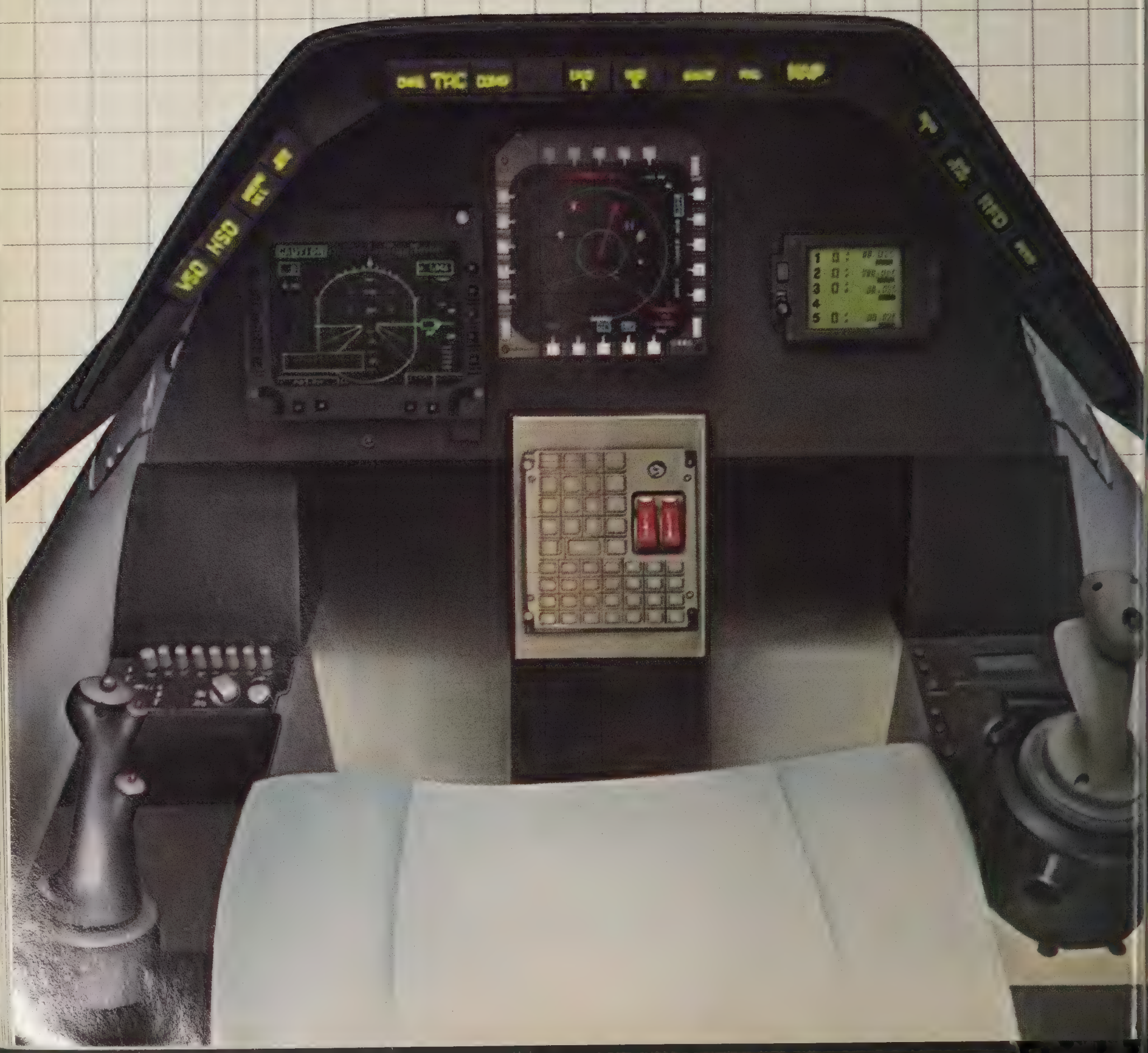
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AN/TVQ-2 ground laser locator-designator.

into the Army's fire support team vehicle, which provides protection and mobility for forward observers.

The second GLD program, the modular universal laser equipment (MULE), developed for the U.S. Marine Corps, can be hand held or mounted on a tripod. Both designators provide precision target marking for Hellfire missiles and enhance first-round accuracy of conventional artillery.

Hellfire entered its fourth year of production in fiscal 1985 with second-buy deliveries starting in September. A development to improve the lethality of the missile was started in fiscal 1985.

■ **Hydra 70 2.75-Inch Aerial Rocket System.** The "Hydra 70" is a versatile rocket system with several warhead options employed as a ground attack weapon for both fixed- and rotary-wing aircraft. The Hydra 70 is the latest configuration of the well-known 2.75-inch rocket. It is distinguished from its Vietnam-era and earlier predecessors by all-new system hardware, allowing greater firepower, accuracy and range. Available warheads include high-explosive, multipurpose ammunition, smoke screen, illumination and training.

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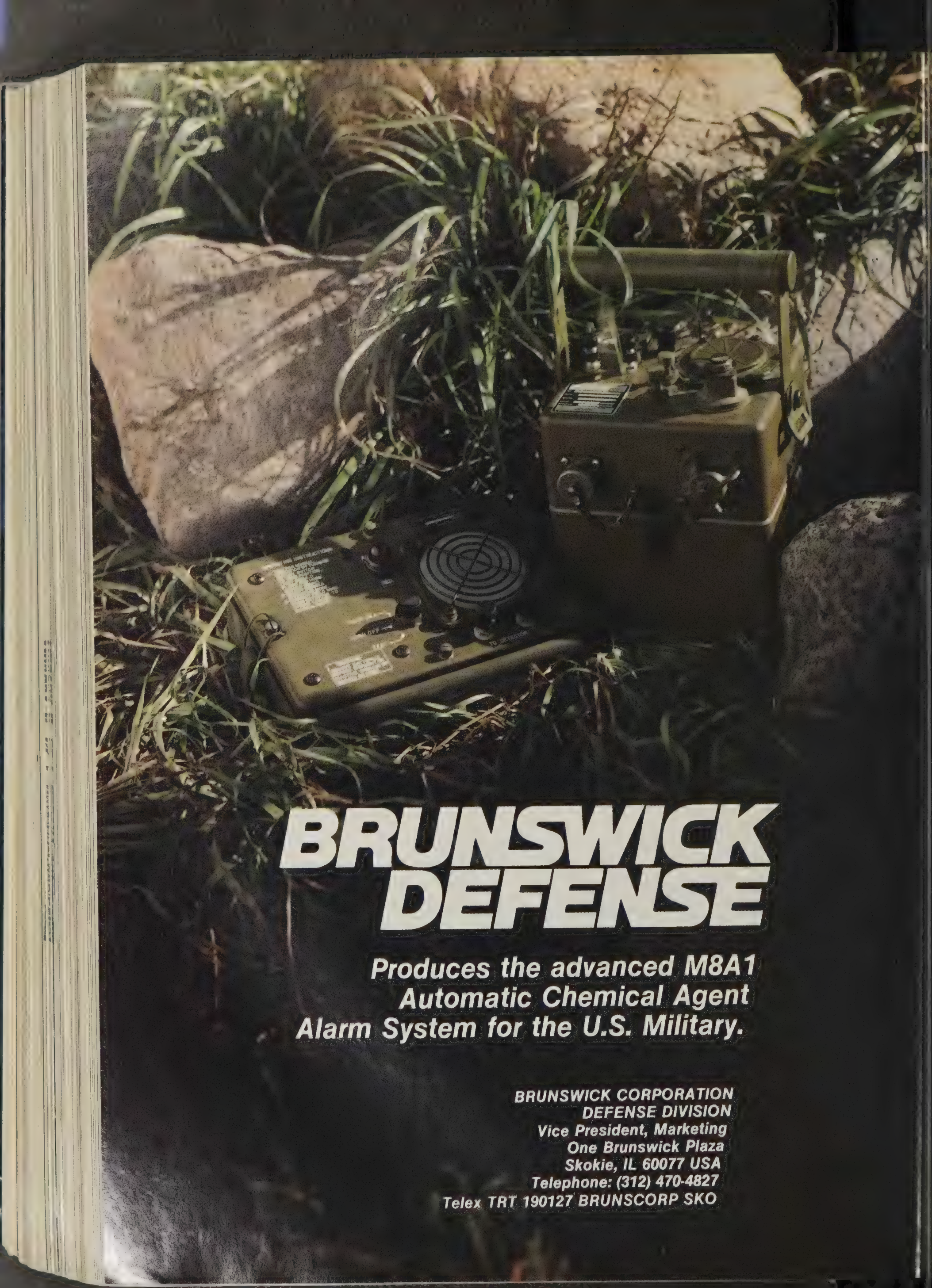
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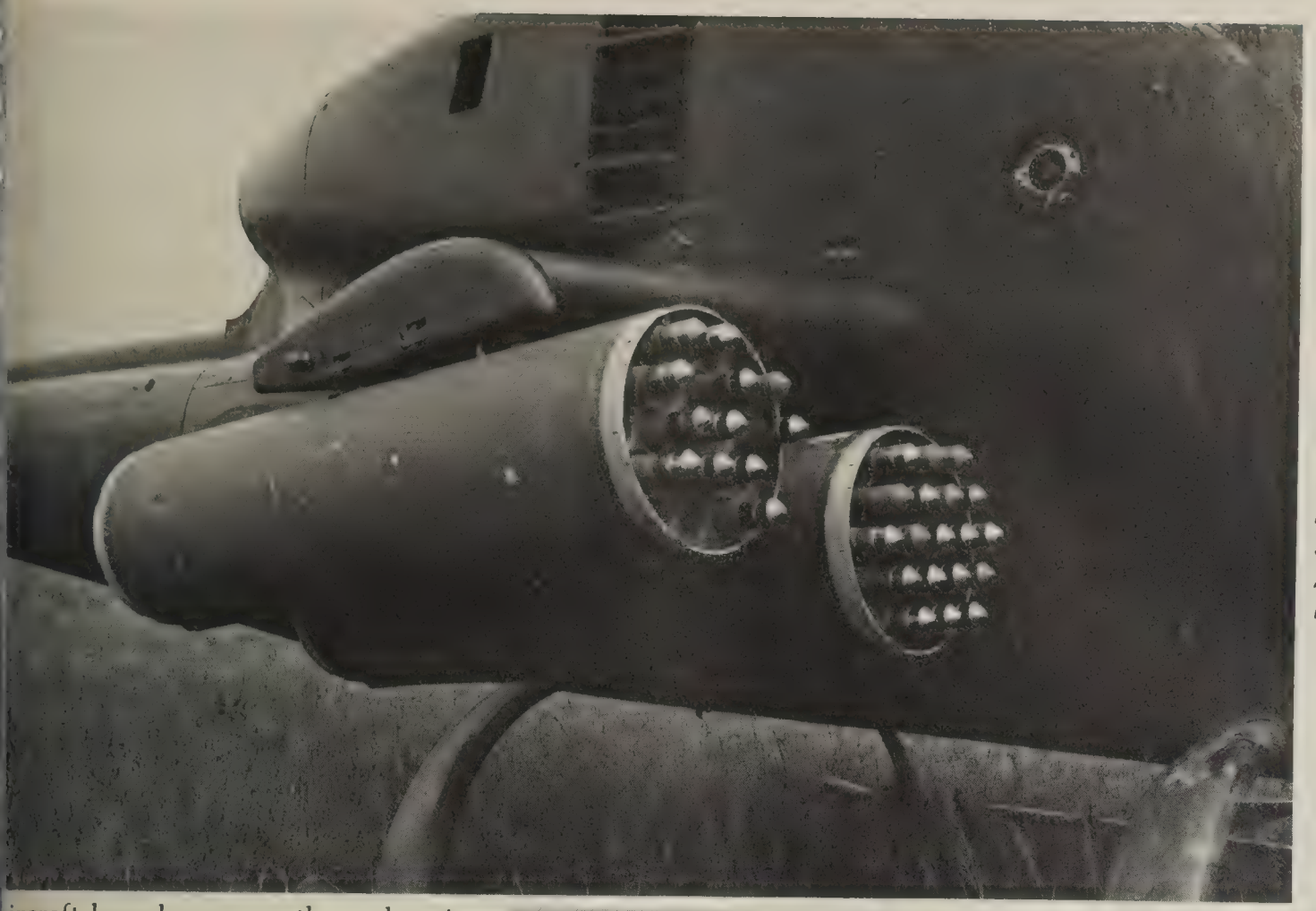
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es each.

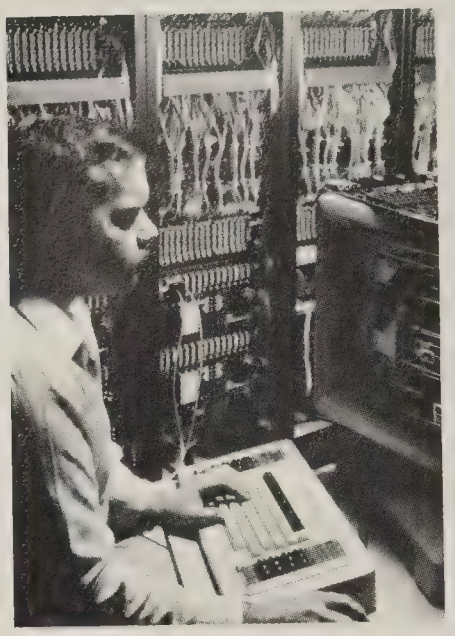
he rocket is operational with all U.S.
ices and more than 30 allied nations.
addition to being the Army's only
al rocket, it is the most widely used
o-ground rocket in the armed services.
ydra 70 evolved from the 2.75-inch
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Pershing II intermediate-range ballistic missile at the moment of engine ignition during a test launch.

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vide control signals to maneuver the reentry vehicle for pinpoint accuracy.

Currently in the production and deployment phases, Pershing II achieved its initial operational capability in December 1983 and is replacing Pershing Ia on a one-for-one basis.

Pershing has been deployed with NATO forces since 1964. In 1965, Pershing was assigned a new and significant deterrent role, "quick reaction alert," which called for improvements in mobility and a faster rate of fire. The improved system, called Pershing Ia, included a shift from tracked to wheeled vehicles and was deployed in Europe in 1971.

Pershing II advanced development was completed in 1978, and engineering development started in 1979, following a NATO decision to extend the range of the missile.

Martin Marietta Aerospace is the Pershing II prime contractor. Hercules Inc. is responsible for the missile's propulsion, Goodyear Aerospace for the radar terminal guidance, and Singer Kearfott for the inertial navigation measurement unit.

■ **Lance Battlefield Support Missile.** The Lance missile system is a corps general-support weapon primarily for use against enemy missile-firing positions, airfields, transportation centers, command and logistics installations and large troop concentrations.

Lance is a highly mobile, supersonic, spin stabilized, surface-to-surface field artillery missile system capable of delivering nuclear and conventional warheads out to a range of about 75 kilometers.

The missile is inertially guided by a self-contained system using the "directional control and automatic meteorological compensation" (DC-AUTOMET) concept. This guidance concept minimizes the effects of enemy countermeasures. Unlike other Army missiles which use solid propellants, Lance uses prepackaged liquid propellants. The missile has a short reaction time.

Lance development was begun in 1962. Missile production began in 1970, and the first battalion was deployed in 1972. It was originally deployed strictly as a nuclear weapon. The Army has eight Lance battalions: six in Europe and two in the United States. Lance has also been sold to NATO allies and to Israel in the nonnuclear version.

The Vought Corporation of Dallas is the prime contractor.

■ **Multiple-Launch Rocket System (MLRS).** MLRS is a free-flight artillery rocket system that greatly improves the conventional, indirect-fire capability of the field Army.

MLRS consists of a 12-round launcher mounted on a highly mobile, tracked vehicle and is capable of firing rockets one at a time or in rapid ripples to ranges of more than 30 kilometers.

MLRS employs the "shoot and sc principle to limit vulnerability to cou battery fire. It provides tremendous power against concentrations of per nel and vehicles and for suppressio enemy air defense units and counte tery fire.

In addition to the M77 dual-pur conventional submunition, the syste deliver the German-developed AT2 terable mine warhead and has the po tial for delivering other warheads, in ing terminally guided submunitions. MLRS rocket is 13 feet long and inches in diameter.

The basic MLRS with M77 warhe currently in full-scale production an ployment. The production is proce under a five-year multiyear con awarded to the prime contractor, Vought Missiles and Advanced Pro Division of LTV Aerospace and De Company. MLRS deployments are accomplished on schedule, with bat already fielded in the United States rope and South Korea.

The MLRS terminal guidance war (TGW) program is a multinational d opment effort involving France, the eral Republic of Germany, the U Kingdom and the United States a currently in the component demo tion substage of the validation ph

The TGW development contract awarded in November 1984 to M Inc., a consortium made up of M Marietta Aerospace (United States), GmbH (Federal Republic of Germ Thomsen-Brandt Armaments (France THORN-EMI Electronics (United King

MICOM first solicited bids for M development early in 1976. In Septe 1977, MICOM awarded 29-month petitive contracts to Boeing Aero and Vought to design, build, tes demonstrate free-flight artillery ro Early in 1978, MICOM redirecte MLRS program toward a standard M weapon that might be produced in the United States and Europe.

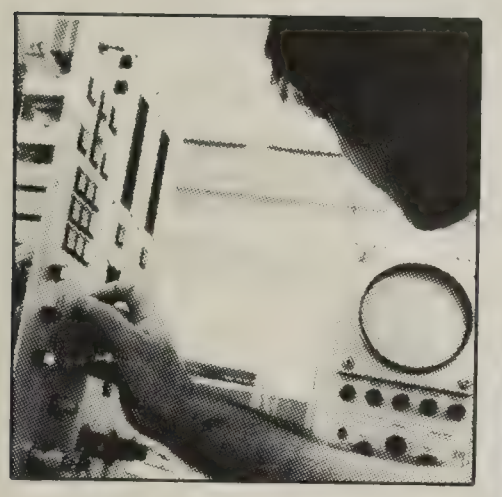
In July 1979, the United States, U Kingdom, the Federal Republic of many and France signed a memora of understanding calling for the co tive development of a standard M rocket. Italy joined the effort in July

Vought was selected as the prim tractor in 1980.

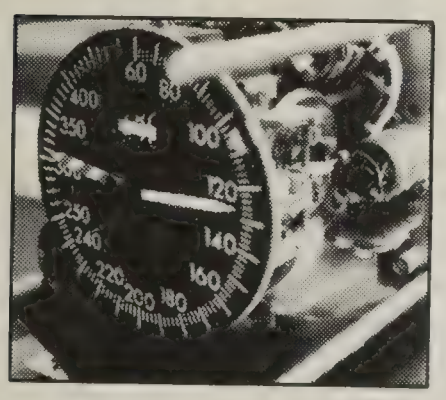
■ **Joint Tactical Missile System- (JTACMS-A).** JTACMS-A is a de ment for a new conventional ballisti sile system that can strike targets behind enemy lines, beyond the ran existing cannon and rockets and the missile.

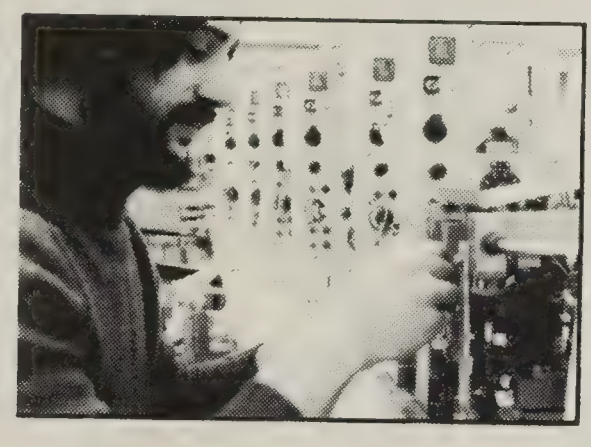
JTACMS-A missiles will be firec the MLRS launcher (see previous e The JTACMS program anticipates a

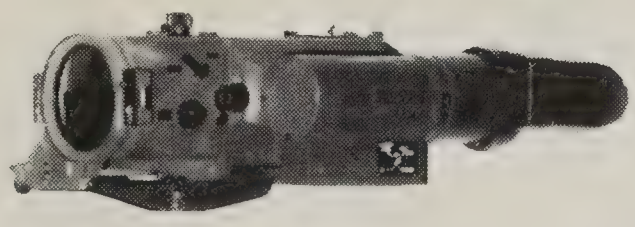
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Lance missile on a wheeled launcher.

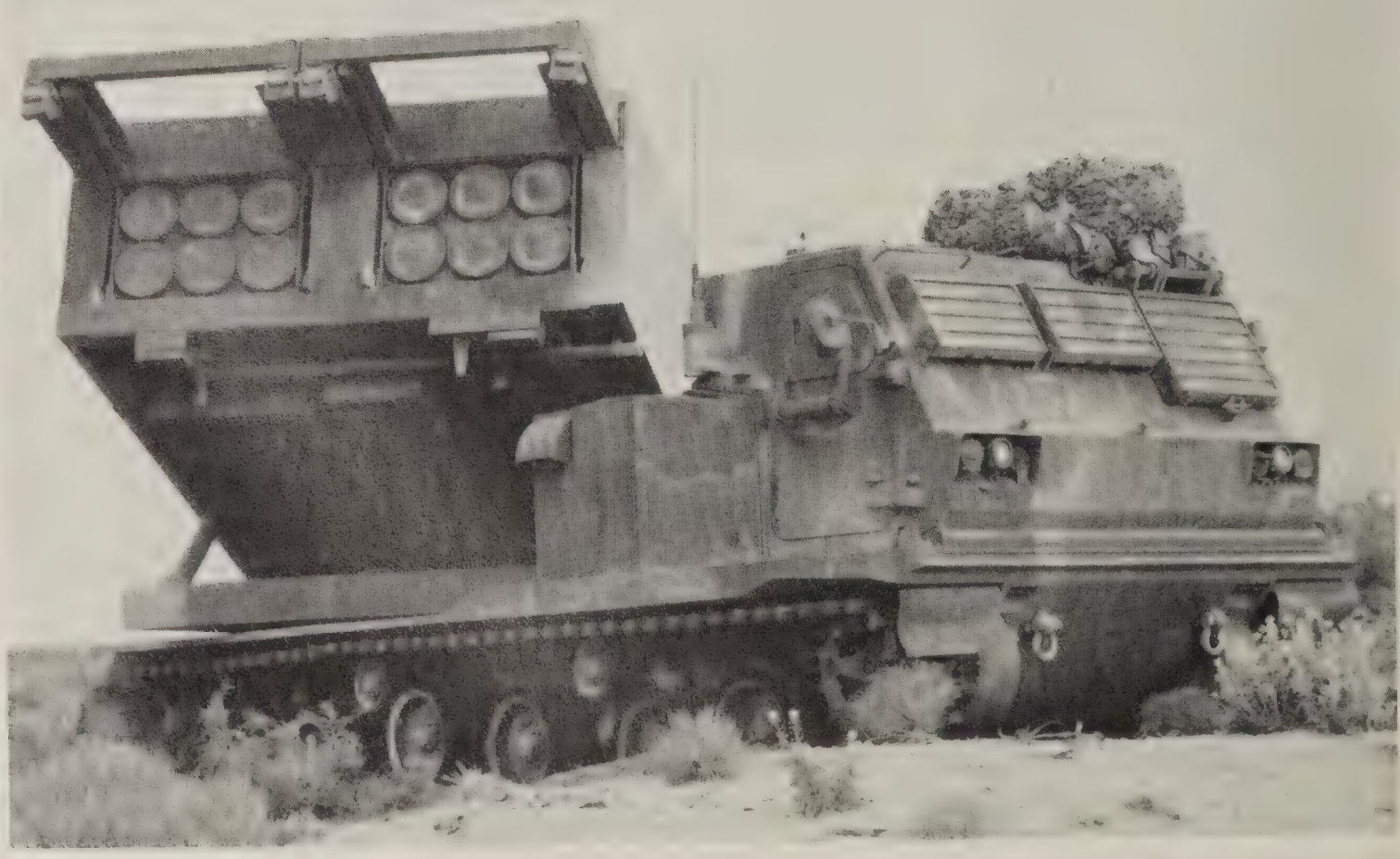
ing initial development contracts in fiscal 1986.

The genesis of the JTACMS-A program can be traced back to the "Assault Breaker" technology demonstration program begun in 1978 by the Defense Advanced Research Projects Agency (DARPA). Formally started in early 1983, the project combined two earlier studies—the Army's Corps Support Weapon System and the Air Force Conventional Stand-off Weapon—into a joint missile program.

In December 1983, the Army directed the Training and Doctrine Command to further analyze, define and develop Army JTACMS requirements. In August 1984, the Air Force terminated their on-site participation at Redstone Arsenal, Ala., in the JTACMS program.

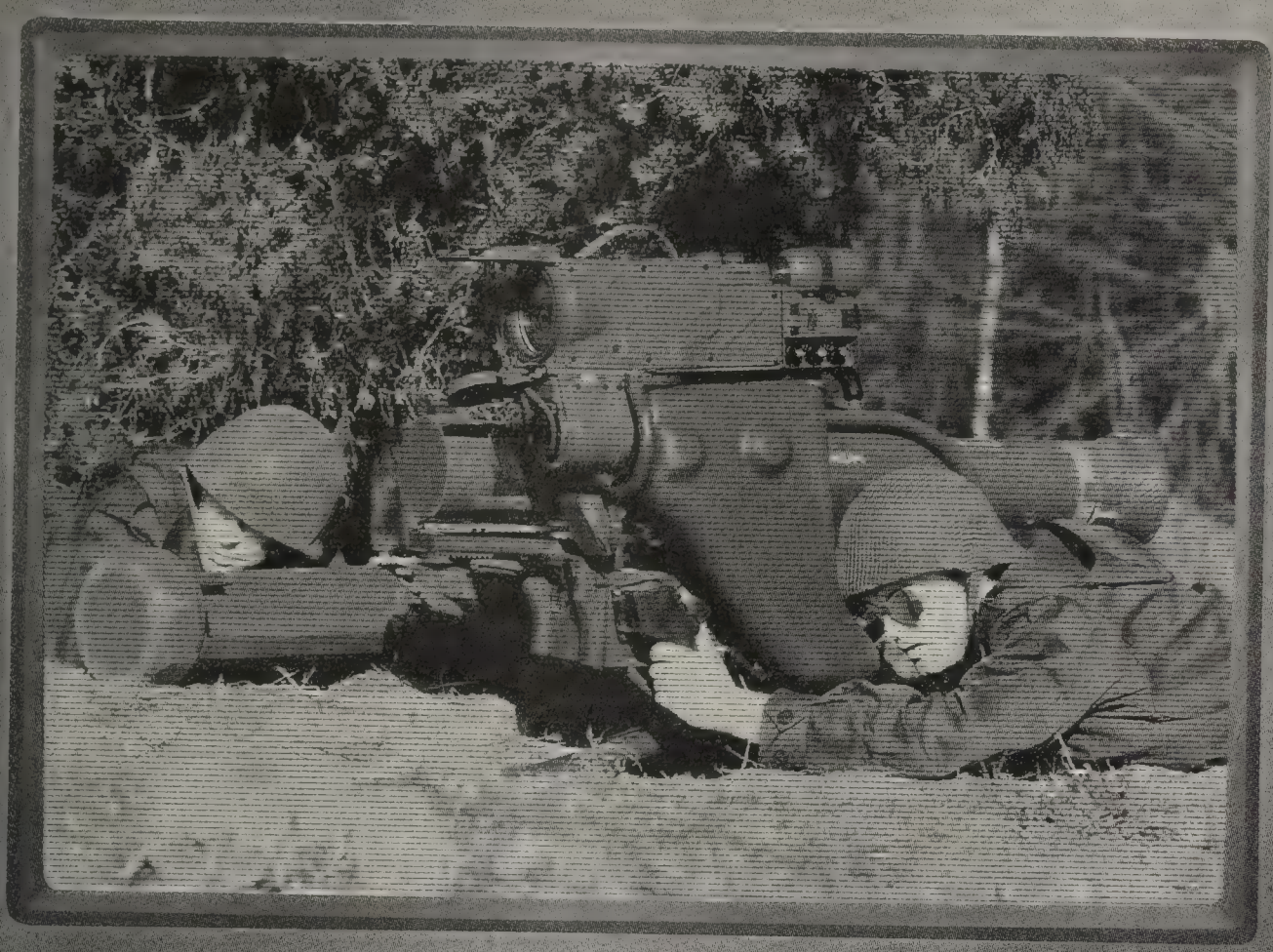
In November 1984, the Defense Department approved the Army's request to develop a version of JTACMS that will provide an early operational capability ROC (required operational capabili JTACMS-A was approved in May and the request for proposals (RF full-scale engineering developmen released to industry the following m

■ **Patriot Tactical Air Defense M System.** "Patriot" is the Army's ne dium- and high-altitude ground-to-a sile system that provides the prima defense of the field Army and defe



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tal military bases. The mobile, all-weather Patriot features a high kill probability, fast reaction time and multiple target engagement capability and is designed to operate in an intense countermeasures environment.

Patriot uses command guidance through mid-course with terminal guidance provided by a new concept called "track-via-missile." As the missile nears its target, it informs the ground-based radar of its location in relation to the target. Ground-based computers then direct the missile on a path to ensure a kill. The supersonic missile employs a conventional warhead.

Two Patriot battalions have so far been deployed with the Army in Europe. In addition to deployment and support requirements, the Patriot program is developing several product improvements to counter future ECM (electronic countermeasures) threats and provide an antiradiation missile (ARM) decoy system.

The first foreign sale of Patriot was to the Netherlands in the spring of 1984. As a result of the joint air defense agreement signed in July 1984 by the United States and the Federal Republic of Germany, Patriot is also being extensively deployed in West Germany through the foreign military sales program, as well as through other special arrangements contained within the agreement. These programs are currently under way.

The Patriot requirement appeared in October 1964 and was directed toward a defense against high-performance aircraft. Patriot was placed under project management in August 1965, and the Army started development in May 1967. Patriot entered engineering development in 1972, but two years later the secretary of defense directed that the program be restructured to include a proof-of-principle flight test program to demonstrate the missile guidance system.

In August 1976, the Army awarded a contract to the Raytheon Company to complete engineering development. In September 1980, the secretary of defense authorized limited production, and initial hardware deliveries began in mid-1982. Deployment of the first operational battalion in Europe was completed in early 1985.

Raytheon Company is the Patriot prime contractor and Martin Marietta Aerospace the principal subcontractor. Thiokol Company is the subcontractor to Martin Marietta for the propulsion unit and General Instruments is developing the ARM decoy system.

■ **Improved Hawk Air Defense Missile System.** The "Hawk" is a medium-range, surface-to-air guided missile to fend against low- to medium-altitude craft.

Hawk is a mobile, all-weather, d and-night system which utilizes pulse continuous-wave radars and proport al navigation guidance combined w semiactive terminal homing. The miss two-stage, solid-propellant motor end it with supersonic speed, and the hi explosive, proximity-fuzed warhead ne only to pass near the target to destro

Hawk was initially fielded with Army in 1960 and has since been quired by the Marine Corps and 21 frie ly nations. The system has undergo and is undergoing, a series of plan improvements to take advantage of technology and counter increased thre Hawk is planned for retention in the defense inventory indefinitely by vi of a 1982 Army decision.

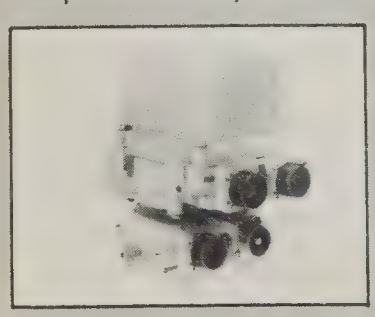
In 1972, improvements were adde all major elements of the Hawk sys to make it more reliable and capa These included solid-state electronic larger warhead, improved motor pro lant and an information coordination tral to provide automatic data proces and to prioritize targets.

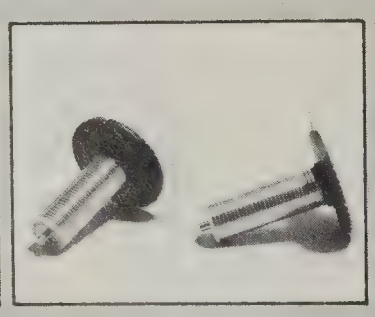
Since that time, Hawk has been up to date through a series of modi

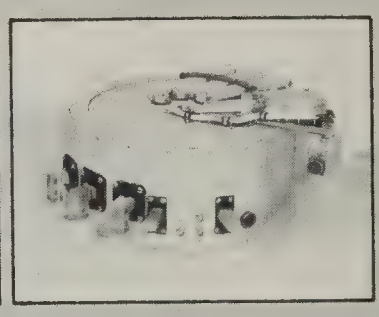
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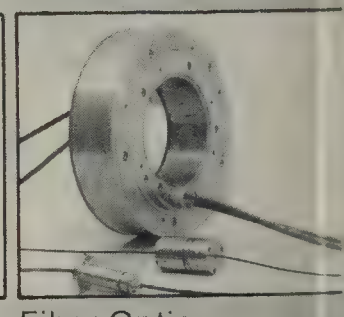
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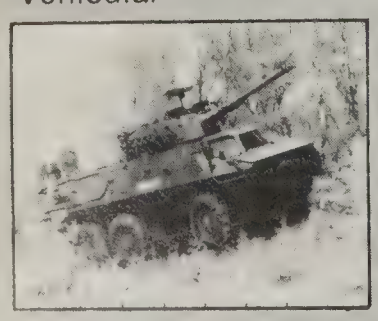

Vehicular

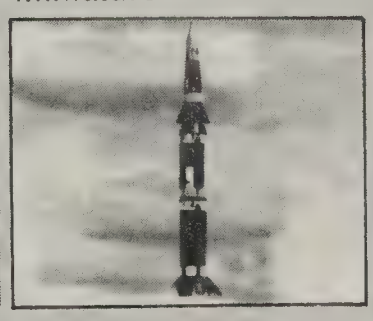

Miniature

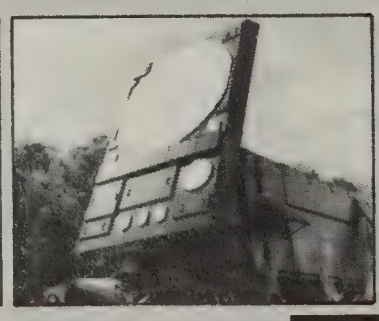

Pedestal

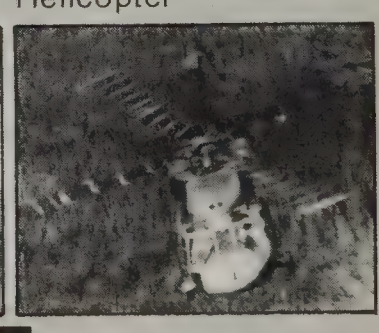

Helicopter

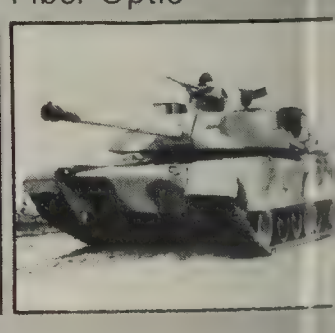

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A Patriot air defense missile bursts from its launcher-container during tests at White Sands Missile Range, N.M. Although single-mou ed for these tests, the Patriot fire unit normally carries four of these containers on the launcher framework.



An improved Hawk air defense missile takes off from a wheeled launcher.

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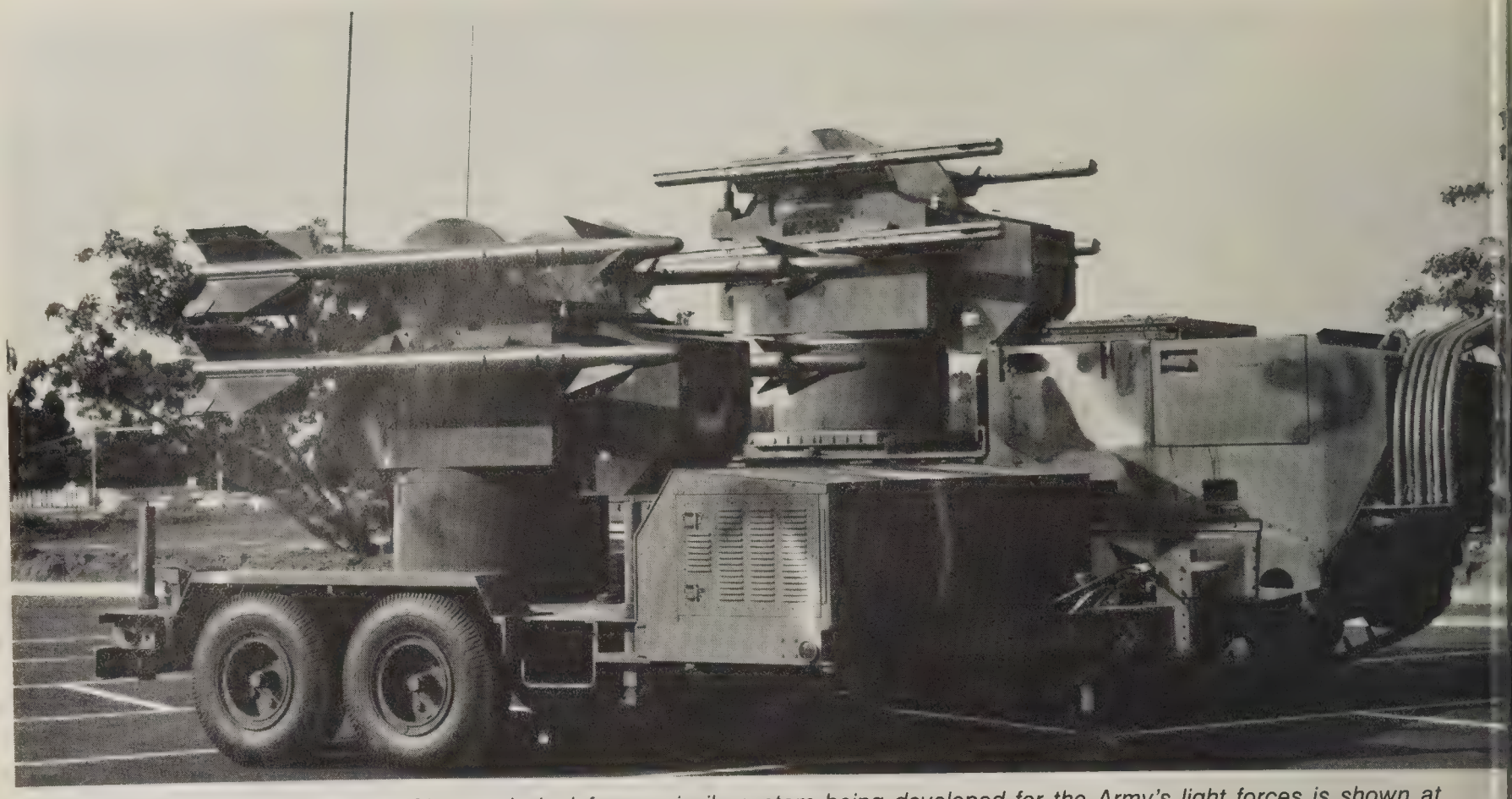
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The towed version of the Chaparral air defense missile system being developed for the Army's light forces is shown at left, compared to the standard model on its M730 tracked carrier.

tions that improve readiness and update hardware technology.

The current improvement program is redesigning the acquisition, tracking and fire control equipment to improve operator interface, electronic countermeasures and the supply of data to the AN/TSQ-73 "Missile Minder" air defense command and control system. The result will be increased firepower and reduced logistics support.

Raytheon Company is the prime contractor for the Hawk system.

■ **Chaparral Forward-Area Air Defense Missile System.** "Chaparral" is a self-contained, heat-seeking missile system that is effective against all types of aircraft at low altitude and provides protection for forward-deployed combat units and divisions and corps rear areas.

Mounted on a tracked carrier, the Chaparral launcher carries four ready missiles on launch rails and eight additional missiles in storage compartments. The supersonic missile is 9.5 feet long and carries a high-explosive fragmentation warhead.

Chaparral will remain in the inventory through the 1990s. Several improvements are planned. A forward-looking infrared (FLIR) night sight—a target acquisition device—has been developed and entered production in fiscal 1982. The FLIR gives the gunner day, night and some adverse-weather acquisition capability.

In fiscal 1982, development was started to provide Chaparral with an improved missile guidance system to enhance capability against infrared countermeasures and to provide external reprogrammable software capability to accommodate evolving threats.

Chaparral was deployed with the New Mexico Army National Guard in fiscal 1984, and a towed version is being produced for the light forces.

Chaparral entered development in 1 and has been in the field since 1969. improved missile was fielded in 197

The Chaparral prime contractor is H Aerospace and Communications Co ration's Aeronutronic Division.

■ **U.S. Roland Forward-Area Air fense Missile System.** "Roland" is a eign-developed, American-built air def system that protects moving columns, fields, front-line armor and depots f low-level enemy air attack.

A short-range, all-weather system, land can operate as a self-contained mounted on a five-ton truck or from f ground emplacements. Each fire unit ries a basic load of ten missiles, mounted on launchers and eight st in magazines ready for rapid, autom reloading.

The crew normally consists of a c mander, gunner, assistant gunner and hicle driver, but each unit can be op ed by a one- or two-man crew. Mi guidance is by radar or optical me

Originally intended for deployment the field Army, the highly mobile, transportable Roland has been activ in the New Mexico Army National Gu which will be on standby as part o rapid deployment force. The first ba became operational in March 1985.

U.S. Roland is the American ada tion of European Roland and is the major European-designed system sele for production in the United States. L ing for an all-weather, short-range sy in the early seventies, the Army e ated three European systems in va stages of development and selected Ro

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The U.S. Roland air defense missile system on the M975 tracked carrier (a derivative of the M109-series self-propelled howitzer chassis) originally developed for it; when production was cancelled in 1981, the role of the few systems produced shifted from air defense of front-line mechanized units to support of light, deployable forces, so the Rolands now in the field with the New Mexico National Guard are mounted on five-ton trucks.

n 1974, proposals were solicited and he following year, the Army signed a ıtract with Hughes Aircraft Company l Boeing Aerospace for the transfer of and technology to the United States. e system went into production in Oc- er 1979. Later, the decision was made ield only one battalion with the New xico Army National Guard.

l Stinger Portable Antiaircraft Missile. s is a man-portable, shoulder-fired ded-missile system which gives soldiers . Marines effective air defense against cking low-level aircraft.

he Stinger variants of the weapon em include the basic missile, Stinger-ST (passive optical seeker technique) Stinger-RMP (reprogrammable microcessor).

Veighing approximately 35 pounds, ger is replacing Redeye and features roved speed, range and maneuverity. The supersonic Stinger can attack raft from any angle, including those roaching the gunner head-on.

ke Redeye, Stinger is issued as a certi- round of ammunition in a disposable ch tube and requires no field testing maintenance. The system comprises weapon (the missile in its launcher reusable gripstock which contains the rols and launch electronics), an iden- ation-friend-or-foe unit, trainers and llary equipment.

inger-POST has a two-color (infrared and ultraviolet) seeker offering improved acquisition and better counter-countermeasures capability. Stinger-RMP is an upgraded version of Stinger-POST which has an external reprogrammable software capability to upgrade missiles as the threat evolves without costly retrofit programs. Stinger guidance combines the passive homing techniques with proportional navigation.

Stinger is now in full-scale production and deployment. Stinger-POST is in low-rate initial production, and the Army recently awarded an engineering development contract for Stinger-RMP. Meanwhile, the Army is considering mounting Stinger on a variety of helicopters and land vehicles.

Stinger began advanced development



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Stinger portable antiaircraft missile.

in 1967 and entered engineering devel
ment in 1972.

The first production contract was awa
ed in April 1978, and the first miss
were supplied to U.S. Army, Europe,
early 1981.

The Pomona Division of General I
namics Corporation is the prime c
tractor for Stinger.

■ **Redeye Portable Antiaircraft M
sile.** Redeye is a man-portable, should
fired weapon to provide combat tro
the capability of destroying low-fly
aircraft. The weapon is effective at ran
and altitudes commensurate with a cl
in defense against attacking aircraft.

Although the missile is electronic
complex, it is designed for simple,
able operation in the field. It can be
ried anywhere a soldier can take a r
can be made ready to fire in seconds
requires little training to use.

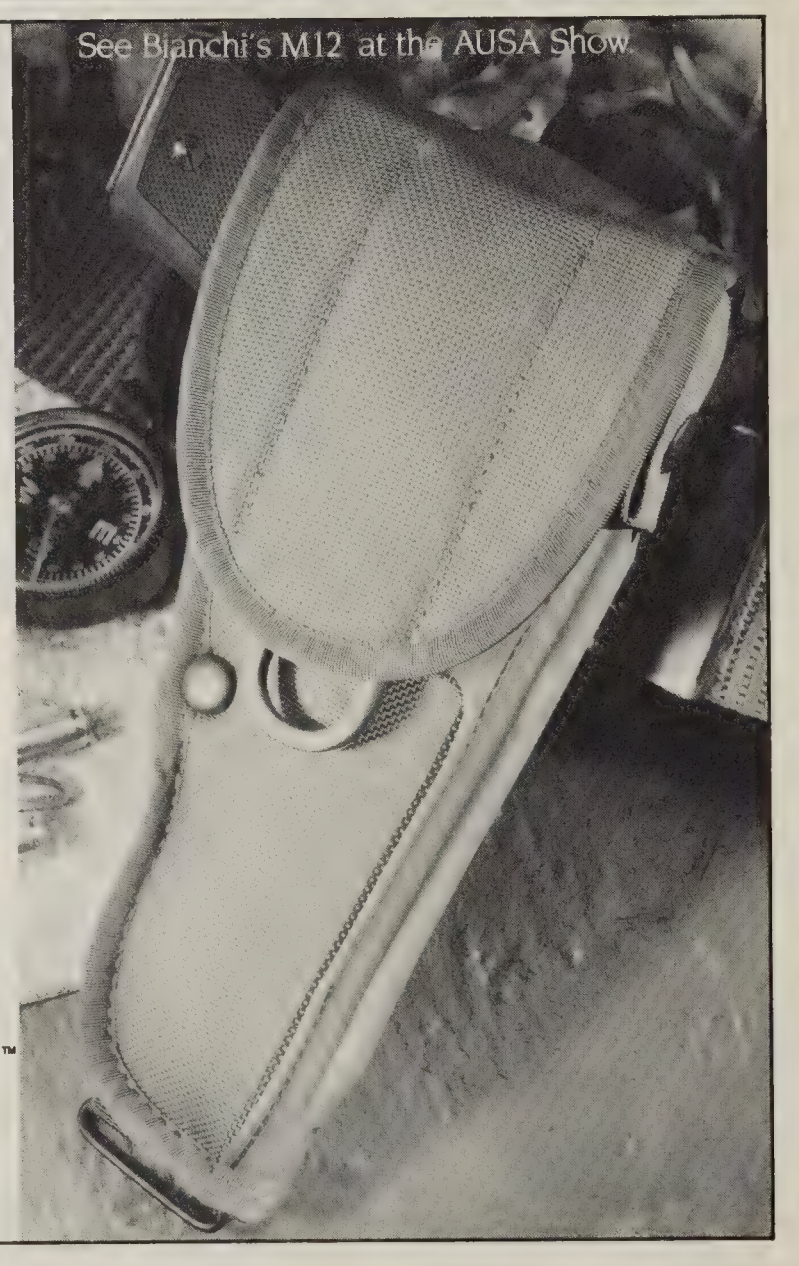
The missile, ready for issue in the
tle area, comes encased in a fiberg
launcher equipped with carrying strap
sight that also serves as a carrying c
In combat, the launcher is discarded
soon as the missile is fired. Initial ta
detection and tracking are accomplis
visually by the gunner. When the airc
is within range and the missile's infra
homing device has "locked on" the ta



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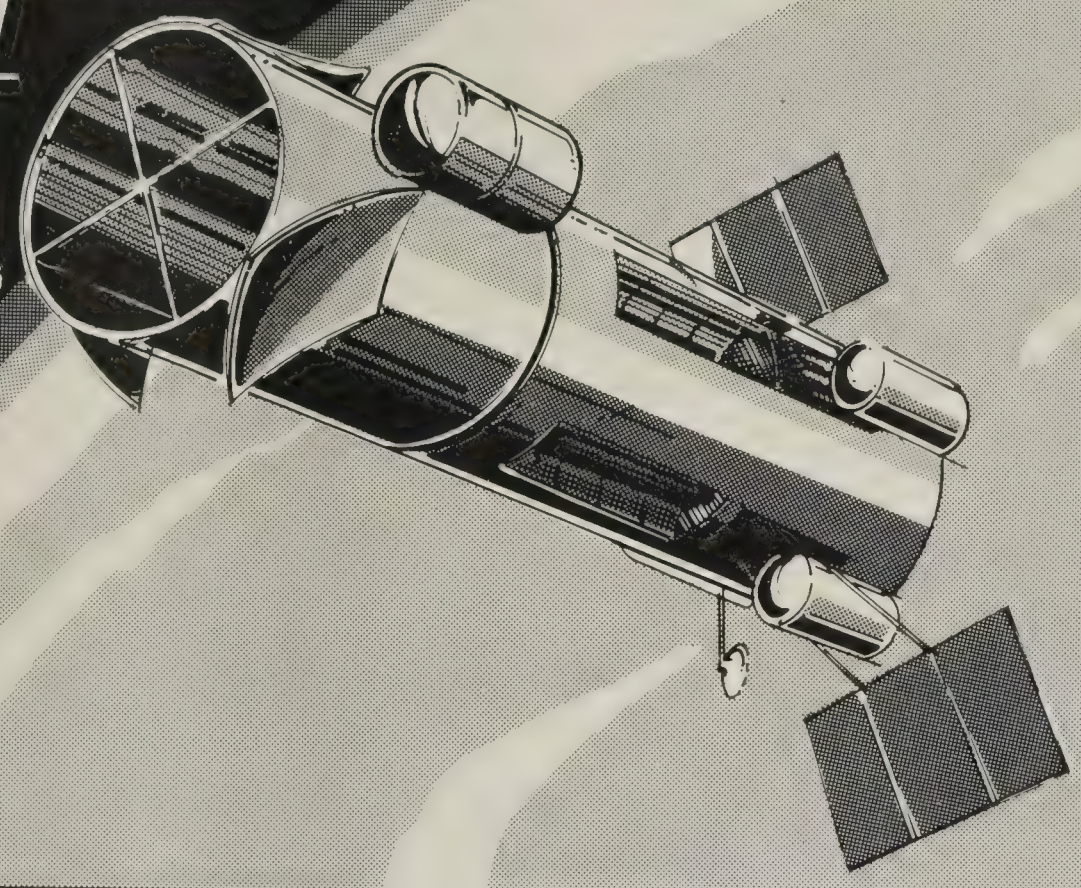
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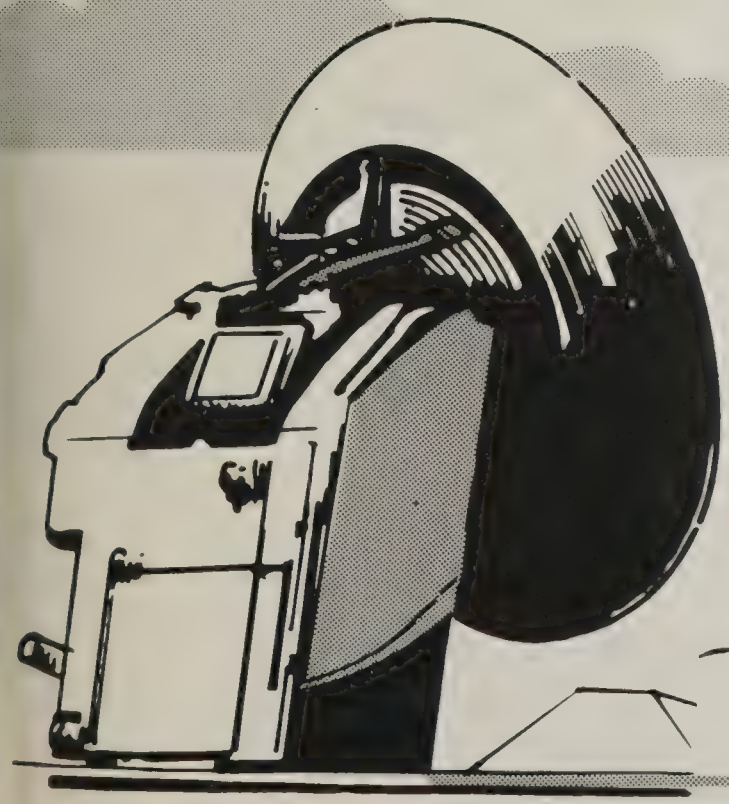
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the gunner squeezes a trigger to fire the missile.

The supersonic missile carries an infrared sensor in its nose, which resulted in the name "Redeye." The sensing device is used as a means of homing on the heat of an aircraft engine. Redeye carries a conventional high-explosive warhead.

Redeye has been operational worldwide with the Army and Marine Corps for more than a decade. It is being replaced in both services on a one-for-one basis by the more capable Stinger. Redeye is also used by several allied nations.

General Dynamics Corporation's Pomona Division is the prime contractor for Redeye.

■ **Setter Missile System.** "Setter" is being hailed as a milestone in MICOM's program to cut development time and save money by focusing missile, rocket and target sensor technologies already existing here and elsewhere.

Being developed for the Army's new light infantry divisions, Setter will provide air defense against helicopters and close-support aircraft and fire support against personnel and vehicles, including light armor.

Setter features eight Stinger missiles, 54 hypervelocity rockets and advanced target sensors, all turret mounted on the Army's high-mobility multipurpose wheeled vehicle, which is replacing the jeep.

The Setter technology demonstration program is moving toward a full-scale test-firing program this fall.

■ **Air Defense Command and Control Systems.** Computer-driven command and control systems coordinate and direct



Missile Command's developmental Set air defense systen composed of eigh Stinger missiles (c board on the fire unit) and 54 hype velocity rockets (t six nine-tube boxe inboard), with the fire unit turret mou ed on a 1¼-ton HMMWV (high-mo ity, multipurpose wheeled vehicle).

Army air defenses against enemy forces. MICOM currently is responsible for two such systems. They are:

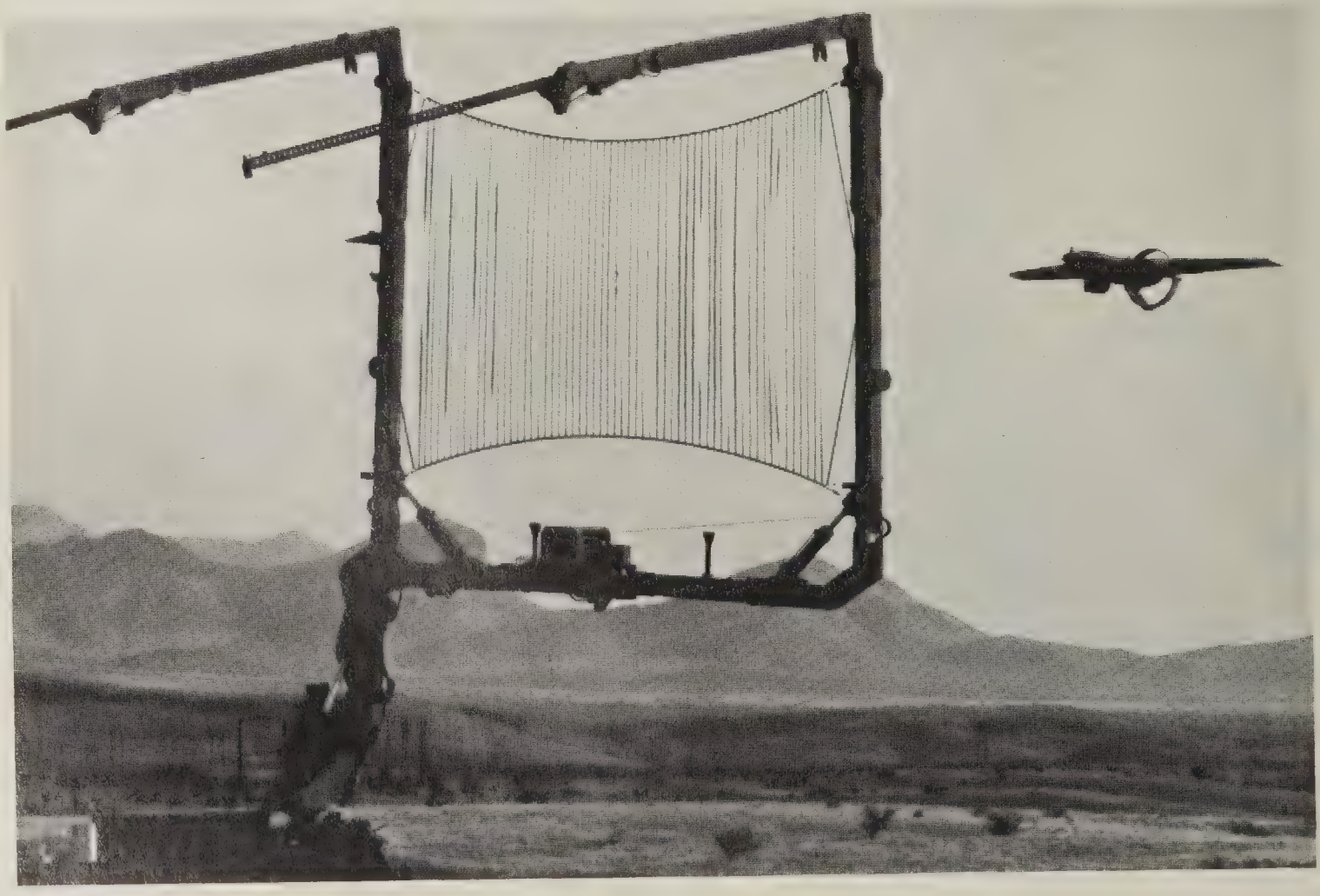
■ Short-Range Air Defense Command and Control System (SHORAD C^2), planned to provide timely and accurate information for systems such as Stinger, Chaparral and "Vulcan."

■ AN/TSQ-73 "Missile Minder," a mobile, automated, medium-range system, deployed at battalion and group levels with the Hawk, "Nike-Hercules" and Patriot missile systems. The equipme housed in a shelter that can be mov truck, aircraft or helicopter and dep quickly.

The SHORAD C^2 program is no dergoing its second evaluation by a my systems acquisition review c and is poised for full-scale develop

The AN/TSQ-73 entered develop in 1970 and full production in 19 was deployed in the late 1970s.

■ **Aquila Remotely Piloted V**



An Aquila RPV (motely piloted v cle) heading for truck-mounted re ery net.

PV). The "Aquila" is a small, propel--driven, unmanned air vehicle designed fly in hostile territory and locate tar-s, adjust artillery fire and designate gets for destruction by laser-seeking illery or missiles. It can also perform veillance, reconnaissance, damage as-sment and other functions.

The RPV is rail launched from a truck, d upon completion of its mission, is overed in a net and reused. It carries or forward-looking infrared sensor yloads that include laser designators. e video from these sensors is projected a TV screen where it is monitored by ntrollers. When a target is found, the ntroller centers a cross-hair sighting vice on the target image on the TV een. At this point, the grid coordi-es of the target can be determined and nsmitted to an artillery unit for en-gement. The RPV can orbit in the tar-area to adjust the artillery fire.

f the controller wishes to illuminate target with a laser beam, he does so depressing a switch. Thereafter, laser-king weapons—such as Hellfire, Cop-head or Air Force laser-guided muni-ns—fired into the general vicinity of target will home in on the laser spot. ce an engagement is completed, the nage on the target can be assessed m the picture on the TV screen.

The RPV permits penetration of the forward line of our troops into zones protected by formidable enemy ground or air defenses and into areas masked to other reconnaissance means.

Aquila characteristics include a two-cylinder, 26-horsepower engine driving a pusher propeller mounted within annular tail surfaces; a length of 6 feet; a wing-span of under 13 feet; and a weight of approximately 260 pounds.

The RPV operates at speeds of between 56 and 113 m.p.h. The cruising duration is three hours and the service ceiling is 12,000 feet.

The system is currently in full-scale development with the production contract award scheduled for fiscal 1986. Initial operational capability is expected in 1989. Four developmental systems have been built.

Responsibility for management of Aquila was recently transferred from the Army Aviation Systems Command to MICOM.

The prime contractor is Lockheed's Austin Division, Austin, Tex. Major sub-contractors are Harris Corporation, Mel-bourne, Fla.; Dornier GmbH, Friedrich-shaffen, West Germany; Singer Kearfott, Little Falls, N.Y.; Westinghouse, Balti-more, Md.; Hitco, Auburn, Wis.; Bruns-wick Corporation, Marion, Va.; and All-American Engineering, Wilmington, Del.

Army Tank-Automotive Command (TACOM)

TACOM's products are tracked and wheeled combat, tactical and general-pur-pose vehicles, along with selected classes of construction and materials-handling equipment.

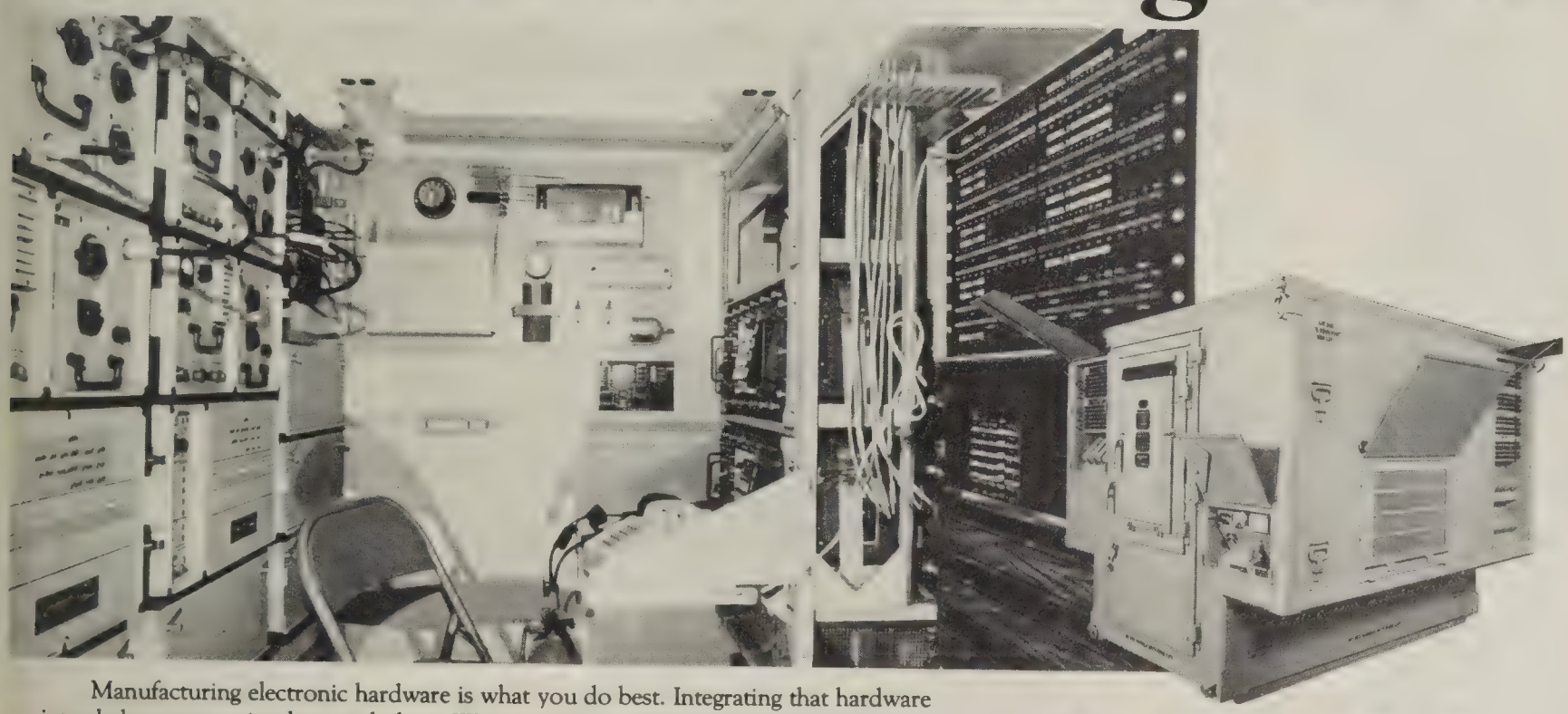
The command's mission can be sum-marized in four words: develop, procure, distribute and support. TACOM has the life-cycle responsibility for the vehicles and equipment it manages. TACOM's customers, in addition to the Army, in-clude all of the military services and more than 60 allied nations with whom the command has foreign military sales (FMS) agreements.

TACOM employs approximately 6,200 civilians and 300 service members. The command's facilities at the Detroit Arse-nal in Warren, Mich., include the the contractor-operated Army Tank Plant, where M60 and M1 tanks are assembled. TACOM also controls the Lima Army Tank Center (LATC), Lima, Ohio, where the M1 Abrams tank was first produced.

* * *

■ **M1 Abrams Main Battle Tank.** The fact that the Army has in the past wanted to stretch out M1 production a bit to aid the budgets of other programs has exas-

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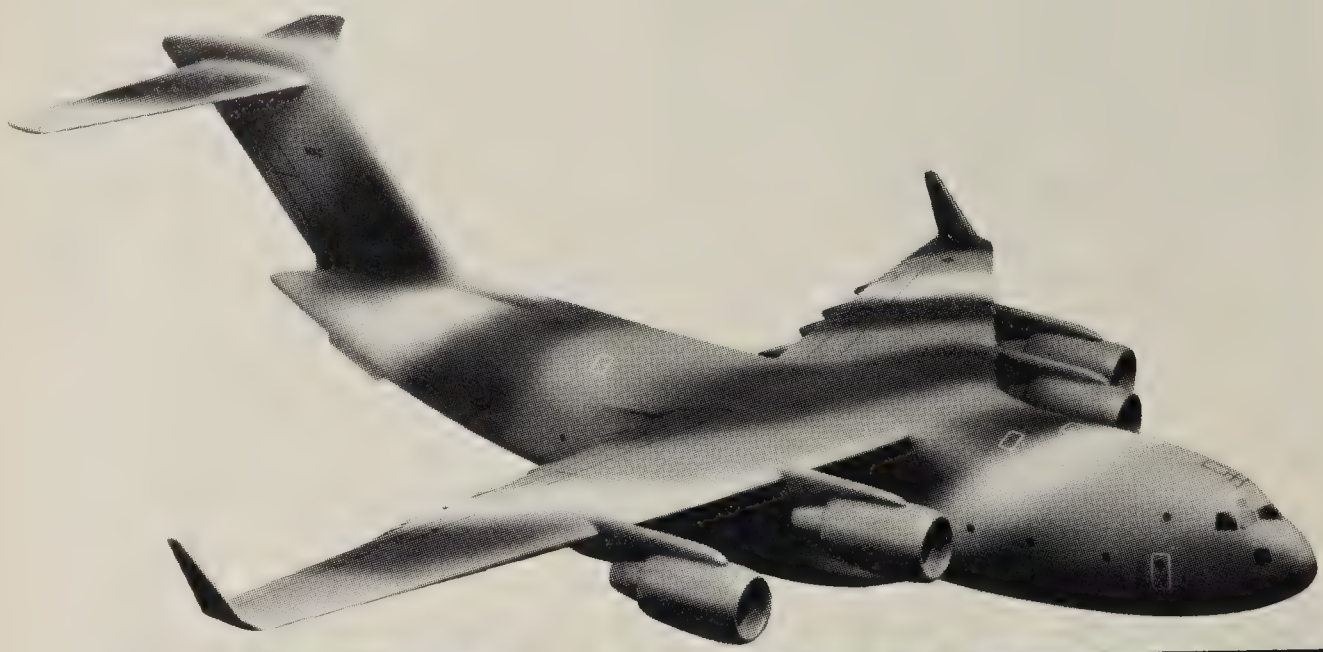
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M1A1 Abrams main battle tank.

perated the congressional military committees, who have become committed exponents of the new tank.

Beginning in fiscal 1983, Congress gave a considerable boost to M1 production, taking advantage of favorable contract negotiations to increase the Army's order from the requested 776 tanks to 855. The pattern was repeated in fiscal 1984 and 1985 as Congress upped the buys from 720 vehicles to 840.

For fiscal 1986, the Army's program is for 840 tanks on a multiyear basis at $1.75 billion in new money (that is, not including funds carried over from previous years nor advance procurement).

The first production M1 appeared at the Army tank plant in Lima, Ohio, in February 1980. The M1 was type classified as standard in February 1981 and cleared by the Department of Defense (DoD) for full-scale production in November 1982, following certification that engine reliability problems that cropped up in developmental testing had been solved.

M1 tanks are also being produced at the Detroit Army Tank Plant with the first production vehicles being delivered from that facility in March 1982. The total number of M1s delivered through September is approximately 3,000, and production is at a nominal 70 vehicles per month. The most economical rate is considered to be 90 vehicles per month, or 1,080 per year.

The M1 made its operational debut in the 1982 "Reforger" exercises and NATO autumn maneuvers in West Germany. The first tanks were delivered to U.S. Army, Europe, in January 1982. The M1 has participated extensively in each Reforger since 1982, with its performance being well received. Worldwide, the tank has consistently performed better than required by Army operational readiness standards.

Fielding of the M1 will continue throughout the decade, with a total of 7,467 for the Army to be delivered by the early 1990s.

Reliability testing continues, but the bottom line is combat mission reliability. The M1's combined achievement in developmental and operational testing was 350 mean miles between failures (MMBF), compared to the minimum requirement of 320 miles. Initial production testing of Detroit-produced M1s achieved a reliability figure of 372 MMBF. By contrast, the "mature" M60-series tanks showed an average 242 MMBF after 12 years in production. Today, after considerable effort to improve that performance, they average 407 MMBF.

The M1 has not achieved its track life requirement of 2,000 miles, the average to date being 850 miles. This shortfall does not place an operational limitation on the tank; however, it is a significant contribution to support cost and a high priority is placed on improvement.

The M1 uses a rubber-surfaced track to prevent damage to roads, with th atively light, integrally molded pac track designed to save system weight 2,000-mile durability requirement is g than the achievement of earlier tanks similar track, and it appears to b yond today's rubber technology, the stresses of a 1500-horsepower, 6 tank traveling at speeds up to 45 m However, it should be noted that t a peacetime requirement, the proble ing that the rubber pads wear out qu

The M1 program manager is pur several options to improve track li 20 to 30 percent in the near future, more substantial improvements i long term. Activities include study ternative rubber compounds, the a ment of heavier track, incentive cor ing to industry and replaceable pa

Critics of the program cited the fuel consumption of the turbine e While test performance has been ma in relation to requirements, the does not consider this a serious shor ing: the tank is still judged capa operating during a 24-hour comba without the need for refueling.

Actually, the M1 met the requir of a 275-mile range of 25 m.p.h. o ondary roads early in the program this was reduced to about 250 miles the track tension was tightened as p the solution for early track-throwing lems. Testing showed that the 27 goal is met at a speed of about 30 r

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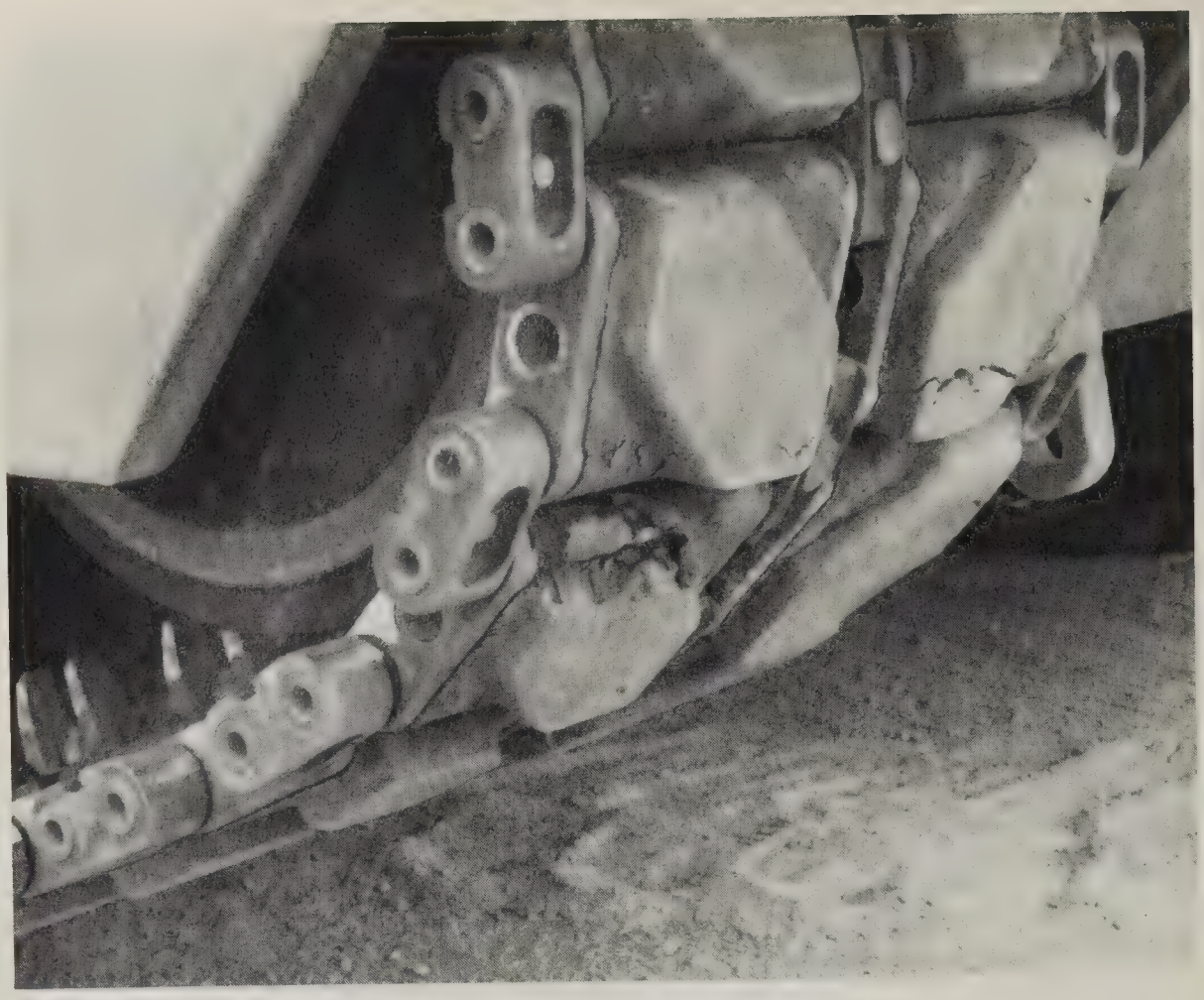
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The cracks and missing chunks of rubber in the bonded pads of this M1 tank track illustrate the durability problems with the standard T156 track; Tank-Automotive Command has placed a high priority on improvement.

on secondary roads, a level at which the engine and transmission operate more efficiently.

Fuel consumption is roughly double that of the M60-series tanks, although engine power is 100 percent greater. The Army is pursuing a program to install an auxiliary power unit in the M1 to reduce overall fuel consumption during the tank's normal use.

Less than half of the 7,467 M1s will be armed with the British-designed M68E1 105-mm rifled gun, which is the standard main armament on U.S. and most other NATO tanks. The balance of production will feature a U.S.-manufactured version of the 120-mm West German smoothbore gun, integrated into the improved "Abrams" tank, designated the M1A1. Following approval by a defense systems acquisition review council, the M1A1 entered production this past summer, with the first two production vehicles delivered in August and another four in September.

The Marine Corps approved the M1A1 for service use in February, with the total quantity to be purchased projected at 560 and delivery to begin around 1990.

The M256 120-mm gun, developed by Rheinmetall, has a tube 46 calibers long and the recoiling mass weighs 4,339 pounds —about 75 percent more than the M68E1. With the West German APDSFS (armor-piercing, discarding-sabot, fin-stabilized) round, which has a tungsten alloy penetrator weighing about ten pounds, it achieves a muzzle velocity of 1,650 meters per second (about 5,400 feet per second), with the extremely high chamber pressure of more than 90,000 rounds per square inch.

There is a shaped-charge antitank round (M830) whose projectile weighs about 30 pounds which is also considered very effective against "soft" targets. The Army has also developed a high-performance, kinetic-energy round, the M829.

A disadvantage in the adoption of the 120-mm, although considered acceptable, is a reduction in the on-board ammunition stowage capacity to 40 rounds.

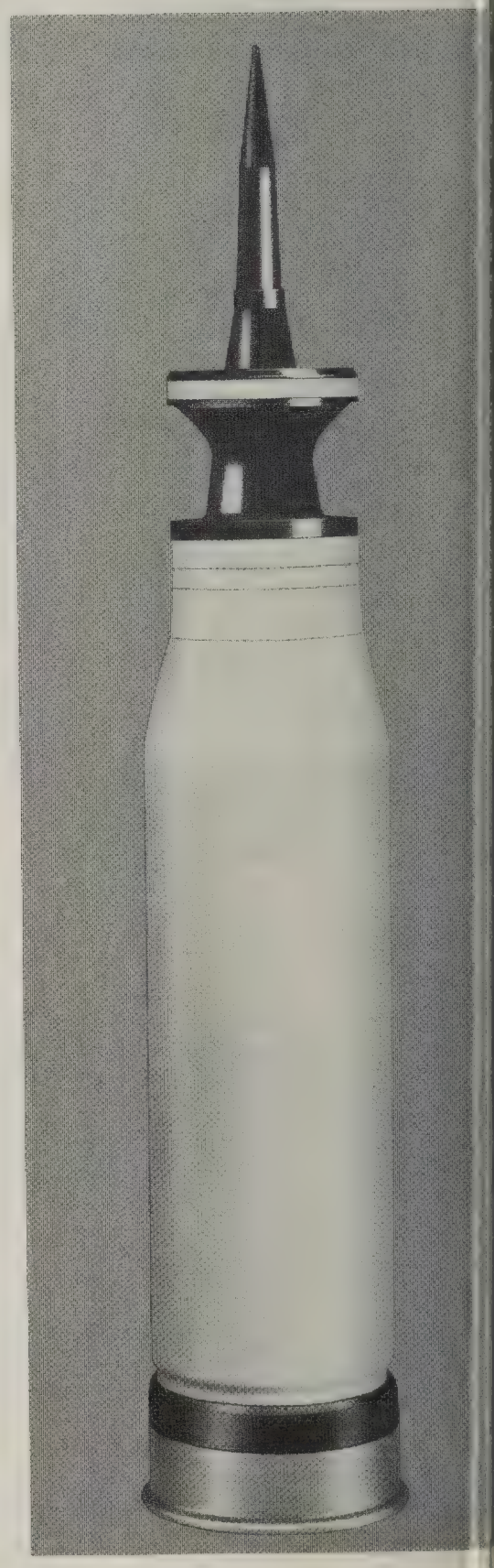
The transfer of the West German technical design and manufacturing know-how for the 120-mm cannon has progressed smoothly, and the Army's Watervliet Arsenal has successfully replicated the West German hardware, using U.S. manufacturing technology and equipment. The gun is being produced to metric standards, and replacement parts will have NATO stock numbers so that the weapons will be completely interchangeable between the M1A1 and the West German Leopard II tank.

The 120-mm ammunition is semicombustible, leaving only a stub metal case in the breech after firing. Concerned about the strength and serviceability of the c pellant case (the U.S.-developed 152-r ammunition of the 1960s tended to c and break), the Army subjected the 1 mm rounds to extensive rough-hand tests to fully demonstrate acceptabi and serviceability.

Modifying the M1's turret to accept larger gun has been a more complica and lengthy process than originally pected; the vehicle was redesigned to cept a notional 120-mm weapon in 19 but the specific model was not cho until 1978 and development could begin before congressional approval e the following year.

M1s armed with the 105-mm gun eventually be retrofitted with the lon barreled version, now in developme

Aside from its main gun, the M1 a coaxial M240 7.62-mm machine gu



The M829 high-performance, kinetic-energy round for the M256 120-mm gun of the improved M1A1 Abrams tank; the first production M1A1s were delivered to the Army in August.

ar weapon on a flexible mount at oader's hatch, and an M2HB .50-cal- machine gun at the commander's sta- A total of 1,000 rounds are carried the .50-caliber weapon and 11,400 mm rounds.

ith the 105-mm gun, there is stow- or 55 main gun rounds, 44 of these id sliding, blast-resistant doors in urret bustle, and all but 3 of them sitions protected against secondary effects. Compartmentalization—the t to isolate the crew from fuel and unition—is a major feature of the ayout.

nmunition storage areas have blow- panels to vent the blast away from nterior of the tank. The armor is conventional and of a spaced and ated special type, giving an unpre- ited amount of protection against ank rounds, including kinetic-energy rators.

e M1's full-solution fire control sys- eatures a laser range finder, ballistic uter, gunner's thermal-imaging night full stabilization, a muzzle reference n to measure gun tube distortion wind sensor. Sophistication of fire ol, which accounts for about a fifth e unit of the tank, was capped to ol costs. Meteorological and ammu- data, for instance, must be entered and.

Still, the system allows the gun to be fired accurately to the limit of its effective range, day or night, with stabilization for accurate fire when under way. Early troop tests by the 1st Cavalry Division and other follow-on tests have shown that crews can consistently achieve first-round hits at ranges in excess of 1,850 meters while traveling cross-country at 25 m.p.h.

The M1 weighs 60 tons combat loaded and the turret roof is 93.5 inches high—a 27 percent lower silhouette than the M60A1 but with the same ground clearance of about 19 inches. The 1,500-horsepower turbine engine yields a power-to-weight ratio of 25 horsepower per ton (compared to 13.5 horsepower per ton for the M60A1), permitting acceleration to 20 m.p.h. in seven seconds and a top governed road speed of 45 m.p.h. Maximum cross-country speed is 30 m.p.h. Ground pressure is 13.1 pounds per square inch of track surface.

The Avco Lycoming AGT-1500 engine drives through a Detroit Diesel Allison X-1100-3B fully automatic transmission with four forward and two reverse speeds. The transmission allows pivot steering and incorporates the braking system.

The turbine engine has been criticized for excessive exhaust heat (the outlet is at the rear of the hull, with the air inlets on the top rear deck), being thus vulnerable to infrared-guided ordnance, dangerous to accompanying infantry and prone to start fires in dry grass and woods.

In fact, the exhaust heat signatures of diesel engines, while lower, are for all practical purposes equally vulnerable to heat-seeking ordnance, with the added disadvantage that the exhaust plume, with its high volume of black particulate matter, is visible to the naked eye at considerable distance. (The M1's exhaust plume cannot be so detected.)

Infantrymen regularly walk ten feet behind the tank (they can get closer when the engine is idling) without being hurt by the exhaust. Finally, in more than 1.5 million miles of normal operation, much of it in dry grass and woods, M1s have not been observed to start a single fire. (The only fire ever so set was a deliberate test in 15-foot-high, matted, dry "elephant grass" in Panama, with part of the exhaust grate removed.)

The M1 can climb a 60-percent slope at 5 m.p.h. and exceed 20 m.p.h. on a 10-percent grade. The vehicle can cross a trench nine feet wide and surmount vertical obstacles more than four feet high.

Product improvements for the M1 were planned almost from the beginning, and the first block of these is in synchronization with the 120-mm M1A1 version. These include transmission and suspension modifications to accommodate the



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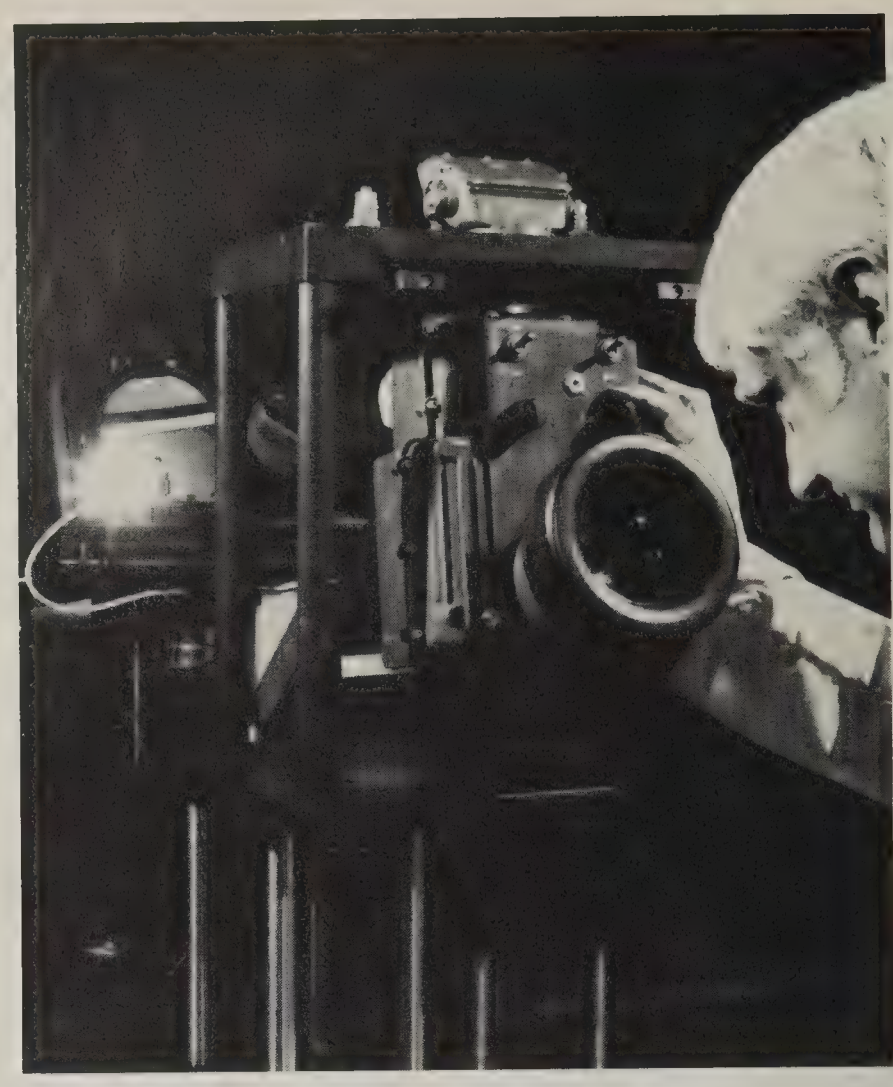
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This driver's therma viewer for armored vehicles is in engi- neering developmer by Hughes Aircraft Company and is scheduled to be in- troduced on the M Abrams production line in 1988 as pa of the second bloc of modular improve ments to the Army main battle tank. The infrared device cuts through haze, fog and battlefield smoke, as well as darkness.

greater combat weight of the M1A1 (62.9 tons); collective NBC (nuclear, biological, chemical) protection, including an air overpressure system for the fighting compartments; and crew cooling.

A second group of product improvements is being considered for introduction on the production line in 1988, including: an improved commander's station coupled with a commander's independent thermal viewer; survivability enhancements; a carbon dioxide laser range finder; driver's thermal viewer; internal auxiliary power unit; and a battlefield management system providing vehicle navigation aid, digital communications and map data display, and identification of friend or foe.

The prime contractor for the M1 is the Land Systems Division of General Dynamics, which purchased the business of the original developer, Chrysler Corporation, in 1982.

■ **M60-Series Main Battle Tank.** The Army has made major efforts to improve the M60 tank, with an inventory goal of 5,400 of the M60A3TTS (tank thermal sight) version. The product improvement program began 1971 with addition of a top-loading air cleaner and add-on main gun stabilization. Next was an engine of greatly improved reliability and a beefed-up electrical system. Passive night-vision devices and a deep-water fording kit were introduced in 1977.

The designation of new production vehicles changed to M60A3 in February 1978, with the introduction of the AN/VVG-2 laser range finder of 5,000 meters range, the M21 solid-state ballistic compu the M239 smoke grenade launcher and M240 7.62-mm machine gun (the Bel MAG58, adopted by the Army to rep the notoriously unreliable M219 in al mored vehicles).

The AN/VSG-2 thermal-imaging n sight began to replace the gunner's sive night-vision periscope in 1979.

The Army's ultimate total M60A3 fleet will be met by 1,052 vehicles f new production, 748 vehicles ga through field retrofit of M60A3 t and 3,600 obtained by depot conver from M60A1s at a rate of 350 annu through fiscal 1985. New productio M60A3TTS tanks continues at the troit Army Tank Plant for foreign tary sales customers.

The last new production for the Army was in 1983. The last of the M60A1s was produced for the Ma Corps in May 1980. M60A3TTS cor sions are being carried out concurre at Anniston Army Depot, Ala., and M Army Depot, West Germany.

The M60A3TTS weighs 57.3 tons c bat loaded and is powered by a horsepower V-12 diesel engine, w gives a top road speed of 30 m.p.h. a cross-country speed of 10 to 12 m The main armament is the M68 105 gun with stowage for 63 rounds of munition. Secondary armament cor of a 7.62-mm machine gun and an .50-caliber machine gun mounted a commander's hatch. With fuel cap of 375 gallons, cruising range is 310 at a steady 20 m.p.h.

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M60A3TTS main battle tank on a t track at Aberdeen Proving Ground, M

■ **M48-Series Main Battle Tank.** The Army converted 1,864 obsolete M48A1, M48A2C and M48A3 tanks to M48A5s with diesel engines, 105-mm main armament and other improvements during the period 1975–79.

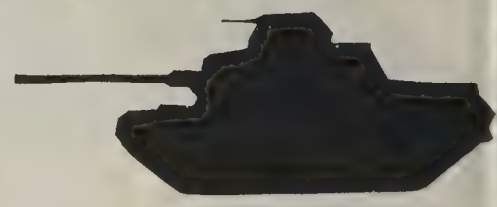
The Army holds 1,478 M48A5s, the balance having been sold to foreign nations, including Iran, Lebanon, Pakistan, South Korea, Spain and Thailand. The latest order is for Pakistan, which will take delivery of another 100 M48A5s during fiscal 1985–86. Turkey is buying more than 500 conversion kits, which will be applied to its older M48s in its own depots.

No active Army units are now equipped with the M48A5, the last two tank battalions of the 2nd Infantry Divisio South Korea having converted to M6 TTSs in 1984. Army National Guar Army Reserve units currently deploy M48A5s.

The M48A5 weighs 54 tons co loaded and is powered by a 750-h power V-12 engine, giving a road s of 30 m.p.h. and a cross-country s

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M48A5 main battle tank.

of 10 to 12 m.p.h. Cruising range is 323 miles at 20 m.p.h. on a 385-gallon fuel capacity. Main gun ammunition stowage is 54 105-mm rounds.

An extra M60 7.62-mm flexible machine gun has been added at the loader's hatch, for a total of two, plus the M219 7.62-mm coaxial gun. There is also a new low-profile cupola—developed by Israel and now manufactured here—which opens to an intermediate position to give the commander some overhead protection.

Fire control equipment includes an active infrared night sight, a mechanical ballistic computer and a coincidence optical range finder.

The automotive performance of standard M48s is similar. The main difference is in the older version's main armar the M41 90-mm gun.

■ **Armored Gun System (AGS).** AGS will be a lightweight, armored deployable system intended to pr direct fire assault support and a ki energy antitank capability for the A light forces. Now in the concept for tion phase, the program resulted fr merger of the Army's "mobile prot gun system" (MPGS) and the M Corps' "mobile protected weapon sy requirements, directed by Congres the Office of the Secretary of Defer 1981. The MPGS was planned a long-term solution for an existing u need. Due to the urgency and the i ity to field an MPGS before the late the "light armor vehicle" (LAV) w lected as an interim system.

In 1982, the lack of suitable ma mament, conflicting requirements general lack of funds led to a two deferral of the program to reassess nology and resolve requirement is

The program continued as a join my-Marine Corps effort until fiscal when the Army withdrew from the program due to concerns over the ability to fully satisfy Army missio quirements. Faced with funding const and already fully committed to the the Marine Corps withdrew their su of the MPGS program. The Army upon revised the requirement stric accordance with Army needs, accel the effort and changed the name t mored gun system."

In July 1984, Department of the directed that the draft AGS require document be revised to reflect a austere configuration. This decisio based on severe funding constraint the relatively small number of syste

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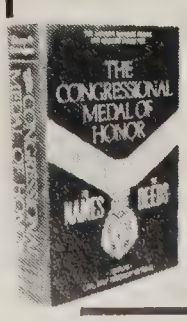
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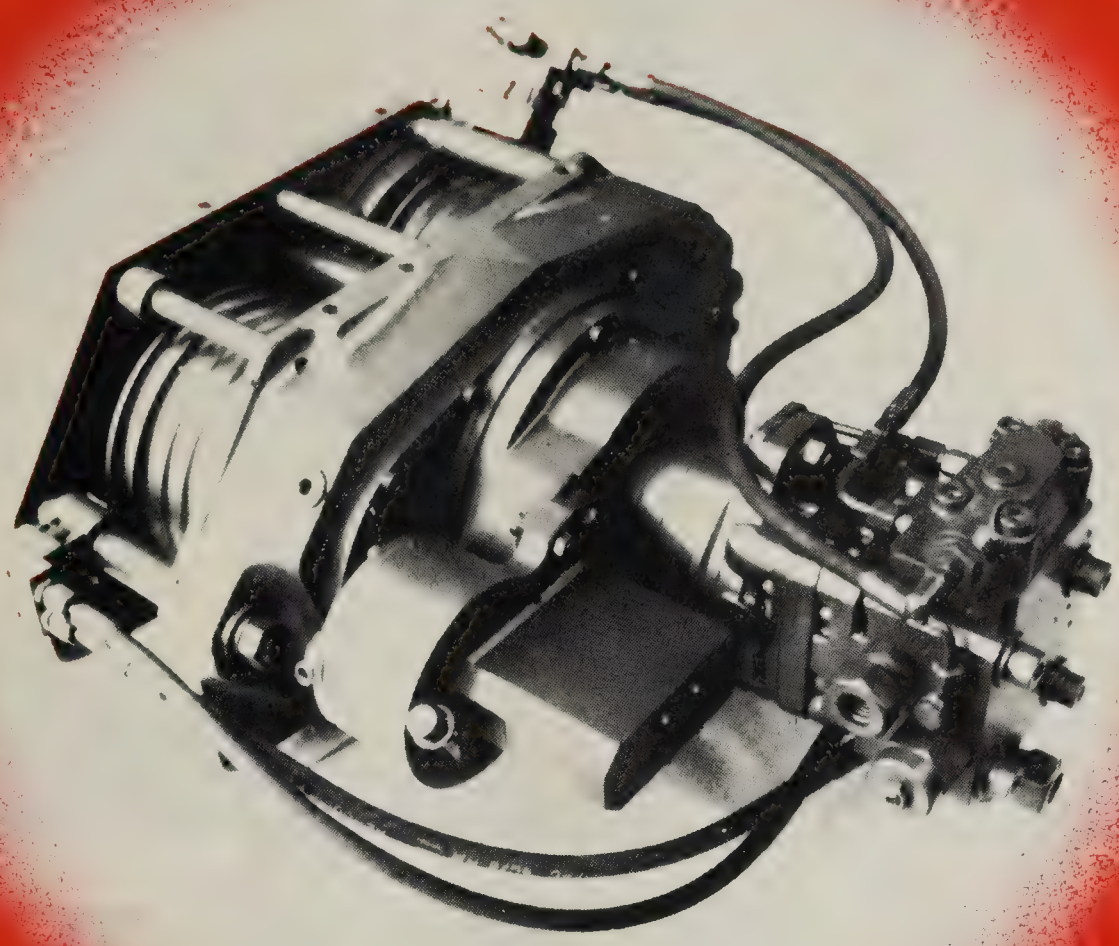
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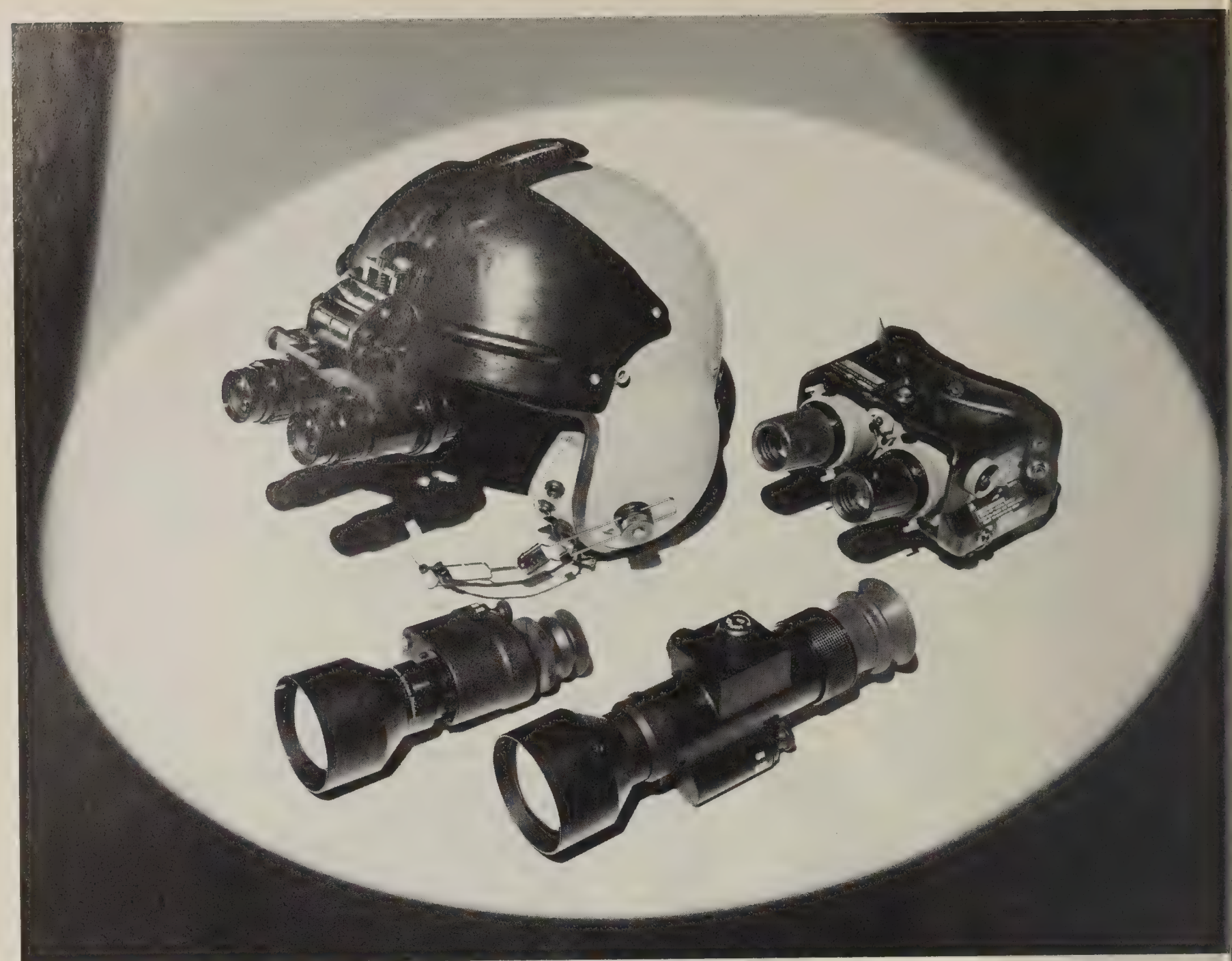
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e procured. In support of this directive s well as an existing urgent need for an GS in the 9th Infantry Division (Motor-ed), Ft. Lewis, Wash., the feasibility of viving the obsolescent M551 "Sheridan" mored reconnaissance-airborne assault ehicle was investigated. In April 1985, e investigation determined that the 551A1 could not be fully supported ith current assets and cannot be con-dered a viable AGS candidate.

Current AGS efforts are directed to-ard resolving requirement, program man-gement and acquisition issues. Pending ailability of funds and program ap-oval, a fiscal 1986 start is envisioned.

■ **Bradley Infantry Fighting Vehicle** V). The "Bradley," the key to the Ar-y's evolving mechanized infantry doc-ne, was approved for full production 1980,and the first production vehicle as delivered in May 1981. It is named r late General of the Army Omar N. adley. The M2 IFV entered service in rly 1983, re-equipping mechanized in-try battalions in the 2nd Armored Di-ion at Ft. Hood, Tex., followed by its of the 3rd Infantry Division (Mech-ized) in West Germany and the North rolina Army National Guard. Fielding ring 1985 is to the 11th Armored Cav-y Regiment in West Germany, the 1st valry Division at Ft. Hood and the ssissippi Army National Guard.

Production of the M2 IFV and the M3 alry fighting vehicle (see entry below) scheduled into the 1990s for a total of 82 vehicles. Production is now run-g at about 55 units per month, and ough 1 October, approximately 2,000 's and M3s had been delivered.

The characteristics of the IFV allow for unted combat and provide the infantry eans to protect tanks and consolidate ns in the offensive. The principal de-n requirements for the Bradley were bility equal to the most modern tanks, h as the M1, and main armament verful enough to handle enemy light or and support the infantry squad en dismounted action is necessary.

The vehicle's interior layout is designed a nine-man infantry squad, including two-man turret for the commander gunner. The main armament is the Donnell Douglas Helicopters M242 25-"Chain Gun." This is an externally ered weapon, cycled by an electrical-riven chain drive. Both armor-pierc-discarding-sabot (APDS) and high-osive (HE) ammunition are available, the gun's dual-feed mechanism can mmodate either type in any combi-on, allowing the gunner to switch in-tly to the type required by the tar-The M2 carries 300 ready rounds for main gun in the turret and a reserve 00 rounds stowed in the rear com-ment.

The M240C 7.62-mm coaxial machine gun, to the right of the main gun, is mounted in its own separate gas-proof box. There are 800 ready rounds for the coaxial gun and 1,540 stowed, as well as 2,200 stowed rounds for the infantry squad's M60 machine gun.

A dual-tube TOW antitank missile launcher, housed in an armored rectangular box, is hinged to the left side of the turret, folding flat against it for traveling and then raised through a 90-degree arc for firing. The high firing position allows the launcher to be fired while the vehicle's hull is behind cover, a practice facilitated by the launcher's separate elevation mechanism, permitting 20-degree depression and 30-degree elevation.

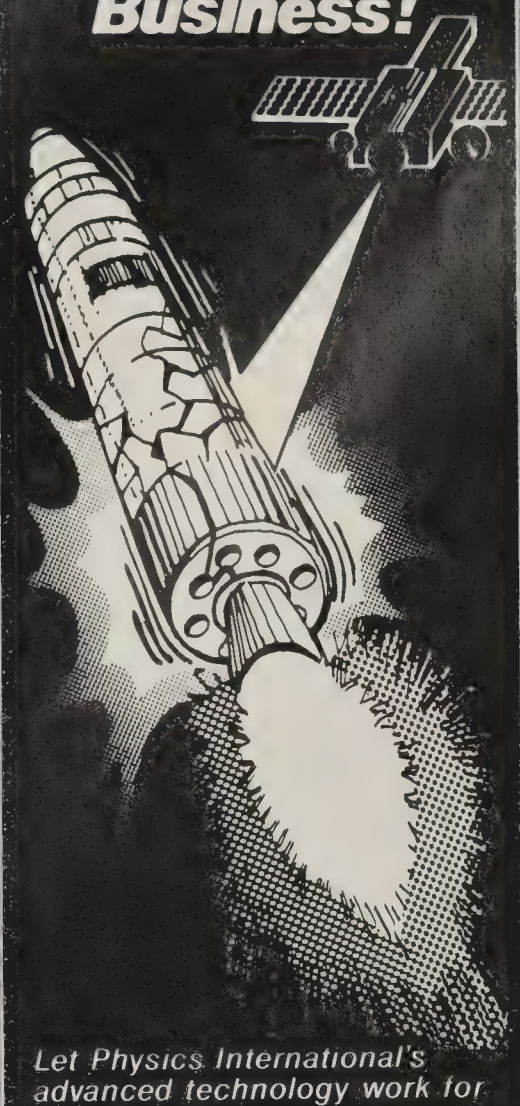
The IFV carries seven TOW missiles, two ready in the launch tubes. The launcher is reloaded through a hatch in the rear deck over the rear squad compartment, an armored cover giving some degree of protection during the operation. Any number up to five shoulder-fired Dragon antitank missiles may be carried in place of the stowed TOWs.

The turret stabilization system that allows the main gun to be fired while the vehicle is under way is considered one of the most accurate of its kind. Contributing to the accuracy are the relatively low turret mass, the optimum placement of gyros and the fact that the gun is mounted close to the vehicle's center line.

The main gun can be elevated to 60

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degrees (a NATO requirement) to engage aircraft and depressed to 10 degrees. The turret drive has two speeds—a slow (0.05 mils per second), extremely accurate rate for laying the main armament and a high-speed (60 degrees per second) slue rate for rapid engagement of alternate targets. The all-electric turret drive and stabilization system was chosen over hydraulic and hybrid models, which are considered vulnerable to flash fires.

The fire control system features an integrated day/night sight incorporating a thermal-imaging infrared device. The sight has 4x and 12x magnification and a "hard" optic relay that allows the commander to see the same sight picture as the gunner in the turret alongside him. The commander, who is seated on the right side of the turret, can override all turret and fire controls.

In the internal layout of the IFV, two infantrymen are seated facing one another, to the left of the turret bar and separated by it, and must tur operate the firing port weapons mou nearly midway along the left side o hull. The other four squad member in the rear using firing port weap two mounted in the rear ramp and at the right rear of the hull.

The M231 firing port weapons are down 5.56-mm M16 rifles in sealed mounts, modified to fire from an bolt with a floating firing pin, so allow gun gases to be vented out The cyclic rate of fire is 1,050 to rounds per minute. The weapons are ed through armor-glass periscopes m ed directly above each position, tracer ammunition exclusively to "w the gun onto the target. There ar sights as such. The M2 carries 4,000 mm rounds for the firing port wea and another 2,160 stowed rounds fo squad's individual weapons.



A TOW 2 antitank missile is launched from an M2 Bradley infantry fighting vehic

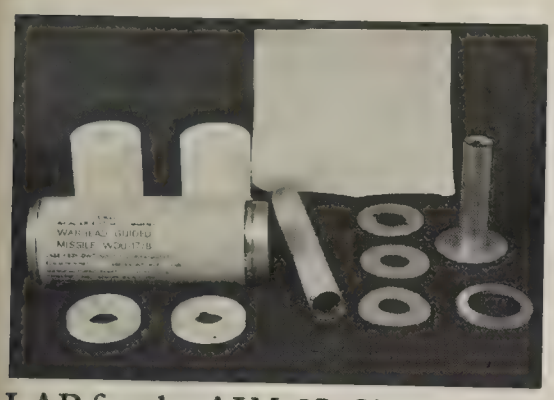
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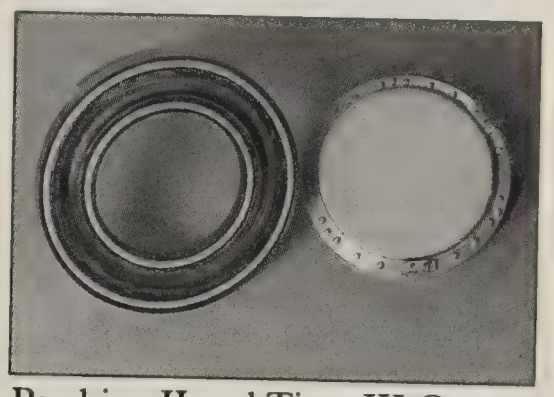
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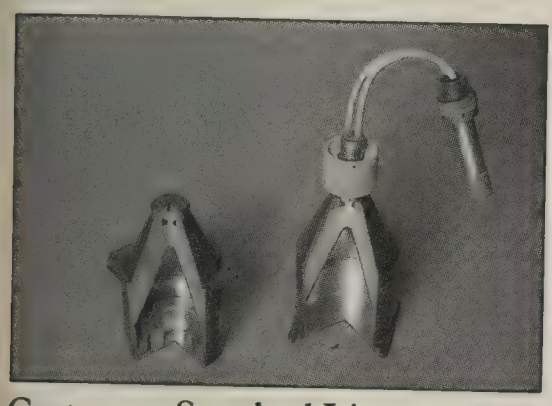
LAP for the AIM-9L Sidewinder Missile Warhead



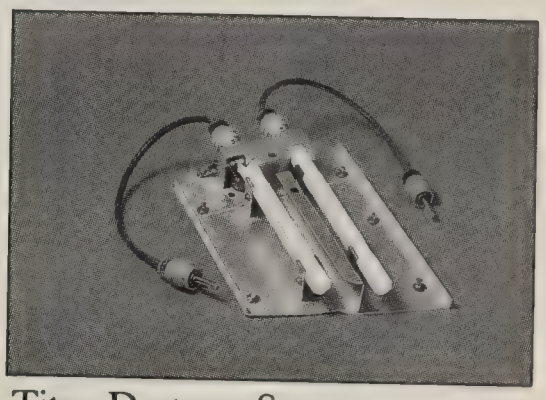
Chemical Munitions Explosive Demiling



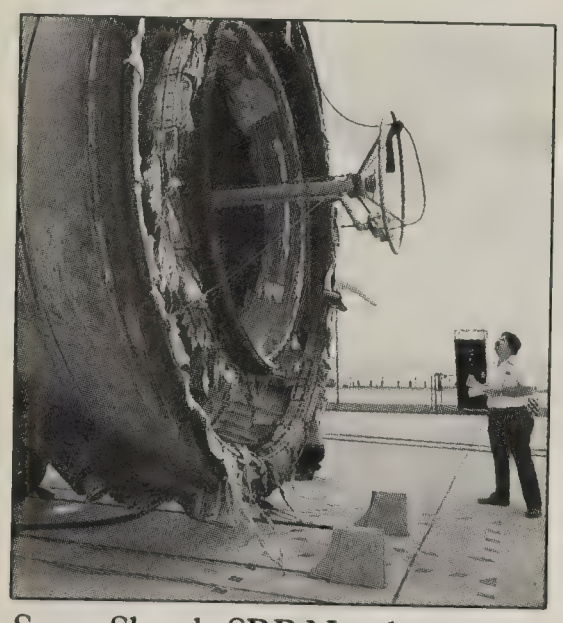
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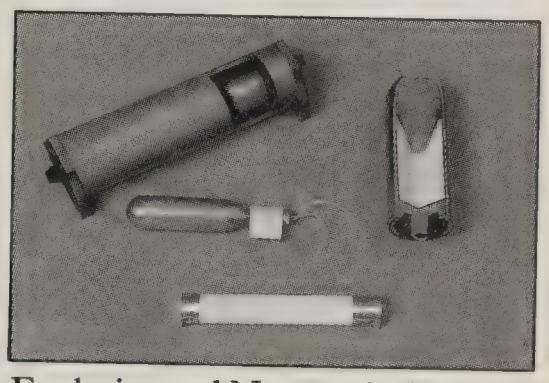
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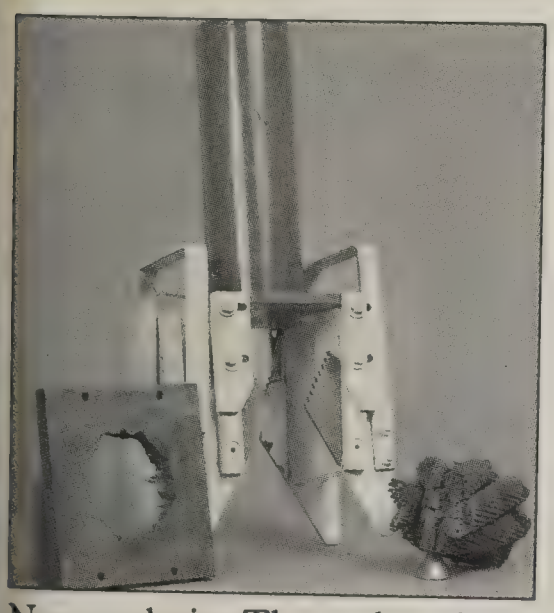
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The basic hull structure of the Bradley is of no. 5083 aluminum armor plate, a heat-treated alloy that includes zinc and magnesium. Some areas of the side slopes employ no. 7039 aluminum armor, which has better properties against kinetic-energy rounds. Steel armor is used to protect the face of the turret. Vertical hull armor is a spaced laminate, consisting of two ¼-inch high-hardness steel plates spaced 1 inch apart and mounted 3-½ inches outboard of a 1-inch aluminum armor base. There is also steel anti-mine appliqué armor ⅜-inch thick on the bottom of the front third of the hull.

The front-mounted engine is the well-proven Cummins VTA-930T turbocharged diesel of 500 horsepower, driving through a General Electric HMPT-500 automatic transmission, the first hydromechanical power train to be adopted for any armored vehicle.

The six road wheels on each side, with shock absorbers mounted at the first, second and sixth stations, have a maximum vertical travel of 14 inches, permitting cross-country speeds up to 30 m.p.h.

The M2 has a top road speed of 42 m.p.h. and a cruising range of 300 miles on its 175-gallon fuel capacity. With a horsepower-to-weight ratio of 20 horsepower per ton—the highest of any tracked IFV in the world—the 25-ton M2 can climb a three-foot vertical wall, negotiate a 60-percent grade, move along a 40-percent side slope and cross an 8.3-foot trench. The vehicle can swim, making 4.4 m.p.h. in the water, propelled by its own tracks. The hull rides very low in the water, so a flotation barrier must be erected. The barrier is recessed in the front and side armor and can be erected by five men in four minutes and stowed in ten minutes.

An upgraded version of the Bradley IFV, the M2A1, will start coming off the production line in May 1986, in the lot of 655 vehicles covered by fiscal 1985 contracts. The first 355 of these vehicles will have a gas particulate filter unit for NBC protection and other "man-machine interface" improvements and will later be retrofitted with the improved TOW 2 missile system. The remaining 300 vehicles will have all of the M2A1 improvements built in on the assembly line.

Other improvements in the early-development stage include upgraded armor protection, further survivability measures, advances in main gun ammunition and better transportability.

The production, fielding and future development of the IFV and the cavalry fighting vehicle are under the management of the project manager for Bradley fighting vehicle systems. These are only two systems under the "umbrella" program manager for light combat vehicles, with offices at TACOM in Warren, Mich. FMC Corporation developed the Bradley vehicles and produces them for the Army.

■ **M3 Bradley Cavalry Fighting Vehicle (CFV).** Intended to replace the M113 armored personnel carrier, which has served as an *ad hoc* armored cavalry scout vehicle, the M3 is externally indistinguishable from the M2 infantry fighting vehicle and has the same armament and automotive performance.

The major difference between the two vehicles is the arrangement of the crew compartment and internal stowage, the CFV being designed to accommodate the five-man cavalry squad and their weapons.

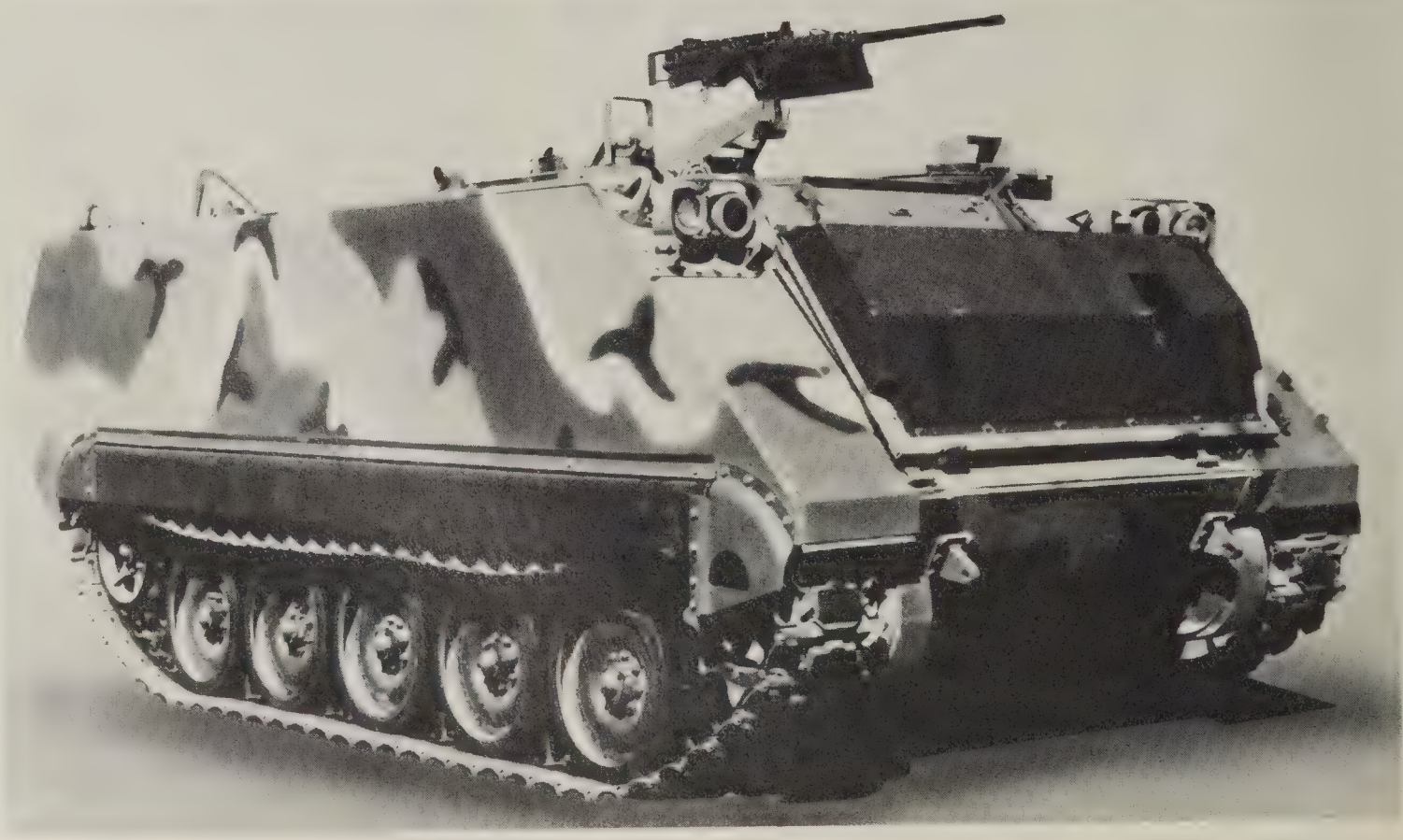
The CFV, for instance, will carry twice as many stowed rounds for the 25-mm main gun—1,200—as the IFV (both c 300 ready rounds) and ten TOW ant missiles in addition to the two that vehicles have ready in the launcher. CFV crew seating arrangement is diffe of course, with two reconnaissance c men in the rear compartment, in adc to the driver and the commander gunner in the two-man turret. The is not fitted with the 5.56-mm firing weapons.

The Army has a requirement for a 3,300 M3s for use in armored ca units and the scout platoons of m nized infantry and tank battalions.

■ **M113-Series Armored Personnel rier.** This is one of the most ubiqu armored vehicles in the world, used least 41 countries, with about 75,000 ing been built by U.S. and foreig censed manufacturers. The standarc rier in mechanized infantry units tracked chassis has also been adapt many other purposes in more tha different models.

Lacking the heavy fire support a ment deemed necessary for mecha infantry operations and unable to pace with the M1 tank, the M113 w replaced as a squad carrier by th IFV in most armored and mechaniz visions. It will be retained only in which have M60-series tanks.

Nevertheless, M113s will be a well beyond the year 2000, and new cles, designated M113A3, will hav mored external fuel tanks, up-rate gines and transmissions and spall to reduce the behind-armor effe large shaped-charge antiarmor warl Eventually, these modifications w applied to the entire Army fleet, now numbers about 26,000 vehicl



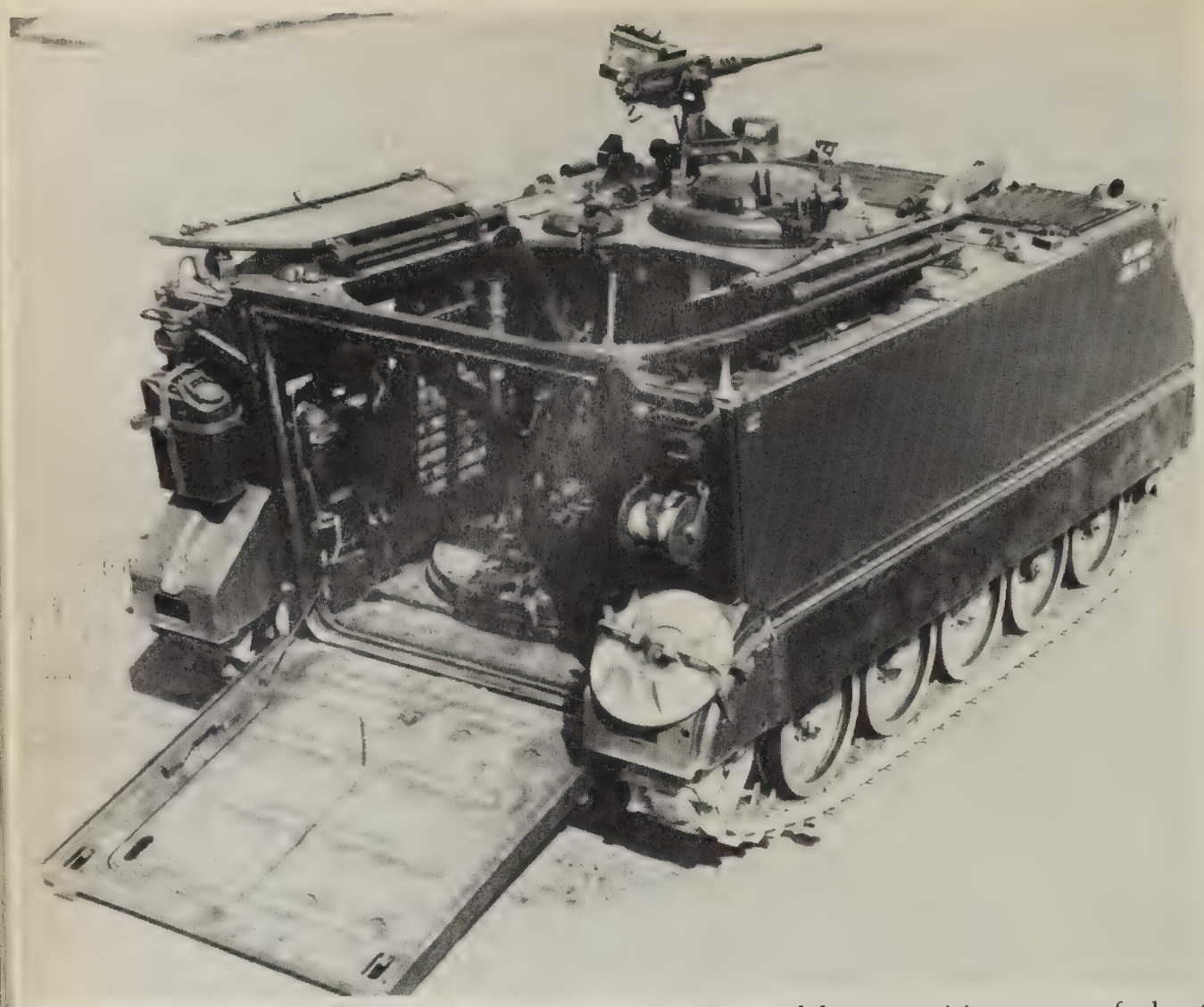
M113A3 armore personnel carrier latest version of venerable and u quitous vehicle, showing the arm external fuel tan added to rear o hull. M113A3s v also have uprat engines and tra missions and in spall liners to re the behind-armo fects of large shaped-charge armor warheads



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The M106A2, a variant of the M113A2 armored personnel carrier, modified for carriage of the M30 4.2-inch mortar.

cluding the special-purpose models).

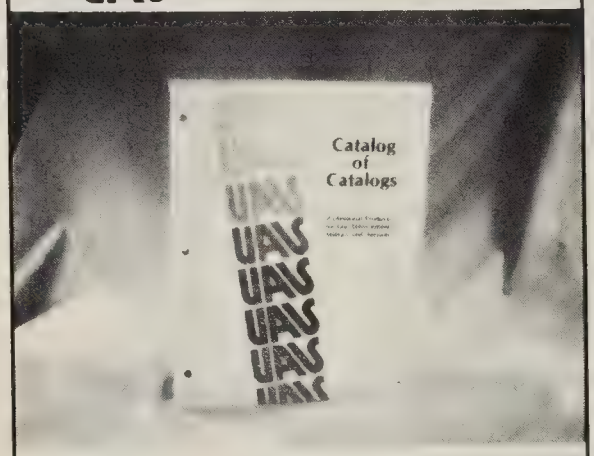
The M113A1, with a 212-horsepower, six-cylinder diesel in place of the earlier gasoline engine, entered production in 1964. The loaded weight, with a 2-man crew and an 11-man infantry squad, is 12.3 tons and the maximum road speed is 42 m.p.h. The vehicle is fully amphibious and has a cruising range of about 300 miles. The hull is of welded aluminum armor, and the normal armament is a flexible M2HB .50-caliber machine gun in the commander's cupola, although many vehicles have been fitted in the field with extra weapons.

Among the many variants of the M are: M106A2 carrier for the 4.2-inch m tar; M125A2 carrier for the 81-mm m tar; M577A2 command post vehicle; M chassis for the M163 Vulcan air def gun; M548 unarmored tracked cargo rier; M667 chassis, a modified M548 as a carrier in the Lance missile sys M727 Hawk missile carrier; the M used as a chassis for the Chaparra defense missile system; the M981 arti fire support team vehicle; and the M improved TOW vehicle.

Continuously modified during its vice, the loaded weight of the M113 ies has grown from the original 1 tons, reaching over 14 tons in the M The decreasing power-to-weight r have lessened performance, and reli ity is lower due to the greater strai major components.

Consequently, the Army embarke a product improvement program to up the cooling and suspension syst and modifications were standardize 1979 in the M113A2 version. The suspension, which allows an increa average cross-country speed from 1 19 m.p.h., is also being fitted to hauled vehicles. Exceptions are the w on-carrying M667 and M741, which

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suspension lockout features for firing.

The more extensive modifications of the M113A3 have been approved for production and these vehicles will begin reaching the field in 1987. The M113A3 will have the more powerful turbocharged version of the Detroit Diesel Allison 6V53 engine, the GV53T of 275 horsepower, driving through an Allison X-200-4 transmission.

FMC Corporation is the developer and builder of the M113 series.

■ **M901 Improved TOW Vehicle (ITV).** This is an M113A1 armored personnel carrier fitted with an elevating two-launcher TOW turret which allows the missile to be fired from hull defilade, with the gunner and his assistant under armor protection. The first production vehicles were deployed to Europe in early 1980. M901s are deployed in some Army National Guard units and were first sent to active Army units in South Korea in 1984.

Developed by Emerson Electric Company, the launcher pod is raised and lowered by lifting arms and incorporates standard TOW day/night sights, as well as a three-power target acquisition sight that can detect tanks at several thousand meters on a normal day. The sight is set at 13x for missile aiming and guidance. The sight picture is relayed to the gunner by an image-transfer assembly.

The launcher is tilted back to reload through the partly open rear cargo hatch where armored side flaps provide protection. The pod can be elevated to 34 degrees and depressed to an angle of 30 degrees. A trained crew can accomplish reloading in less than 40 seconds. The vehicle has a crew of four, weighs 13 tons combat loaded and can carry at least 12 missiles with 2 in the launcher. Range is 300 miles and top road speed is 42 m.p.h. The TOW equipment can be dismounted and set up for ground use in less than five minutes, without the use of special gear.

In mechanized infantry battalions, the M901 has largely replaced the older M113 TOW carriers, in which, to fire the missiles, the gunner must stand exposed from the waist up in the cargo hatch. The M901 is also being distributed to some armored cavalry units on an interim basis, pending introduction of the M3 armored cavalry vehicle. A five-man crew is prescribed for this role.



M901 improved TOW vehicle (ITV).

A program to modify all ITV launchers to accept the improved TOW 2 missile was completed in 1984. The Army National Guard was scheduled to receive another 125 kits to convert M113s to ITVs this year.

■ **M981 Fire Support Team Vehicle (FIST-V).** This is an M113-series armored personnel carrier equipped for use by artillery forward observers in mecha and armored units. FIST-V has bee veloped by Emerson Electric Com and looks almost exactly like the M901 improved TOW vehicle, a sc ticated piece of camouflage that s give an enemy pause.

In FIST-V, the armored pod that mally houses the twin TOW missile la er is fitted with a laser range find cator-designator combination. The raises, lowers and rotates in the manner as the one on the M901 ar only difference in appearance is th and shape of the central opening pod face.

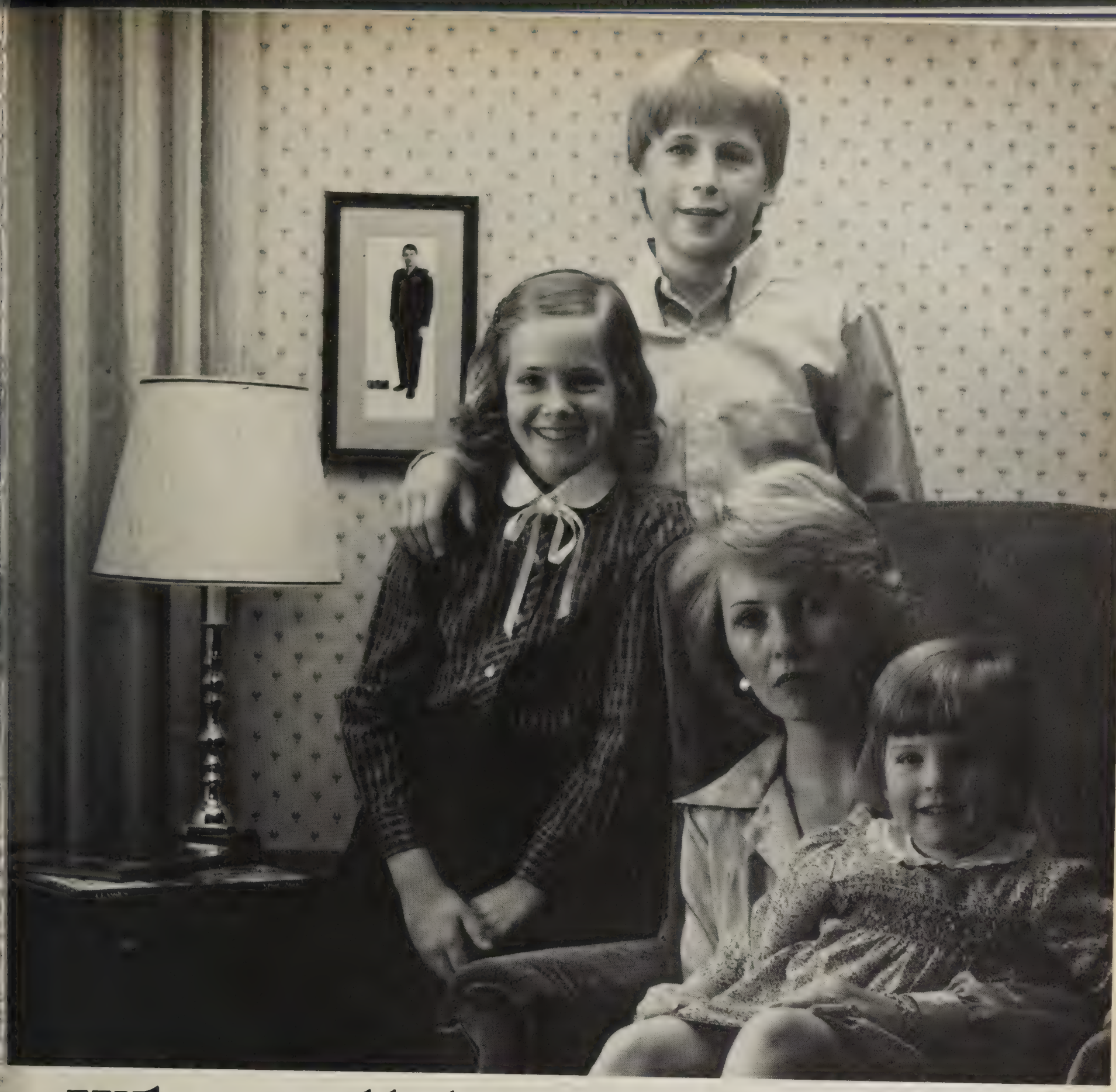
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FIST-V is also equipped with extensive communications equipment (four radios), a north-seeking gyrocompass and a satellite-based position-locating system that allows the observer to fix his position with extreme accuracy.

A digital message-entry device is also mounted in FIST-V, to eliminate the need for voice communications with artillery command posts and firing units.

The vehicle has a maximum loaded combat weight of 13.95 tons and a cruising range of 300 miles. The first conversions from M113 chassis began in 1983 and the first production vehicles appeared in December 1984.

The Army has a total requirement for 967 FIST-Vs. First deliveries to units were made in July, and issue will be complet in 1990. The unit cost of the FIST modification kits for M113s is $385,0



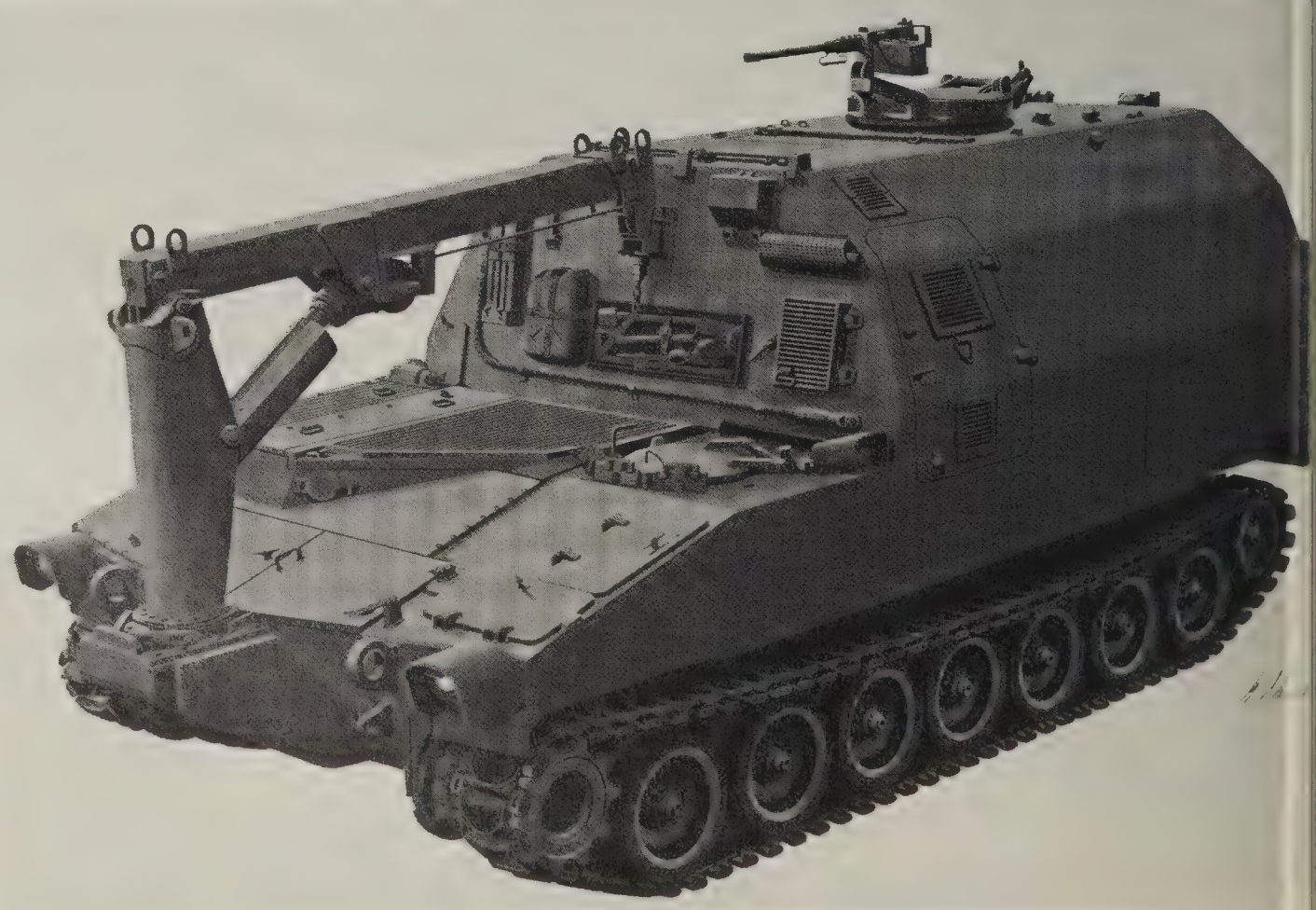
Prototype of the M981 fire support team vehicle (FIST-V).

■ **M992 Field Artillery Ammuniti Support Vehicle (FAASV).** This armo artillery supply vehicle, based on the M chassis, was type classified in the spr of 1983. The Army bought the first vehicles with $29.7 million in fiscal 19 funds.

The vehicle is urgently wanted in rope, and type classification identified immediate requirement for 545 M99 The Army came back with a fiscal 19 proposal for 217 vehicles at $103.4 m lion, but Congress cut this back to units at $59.1 million. The Army recei authority for all of the 170 vehicles quested for fiscal 1985, at a cost of $8 million. The 1986 program envisio $122.1 million for another 230 FAAS The total requirement is for about 1, vehicles, but much of this will rem unfunded.

Begun in 1979 and authorized for development the following year, the FA SV is deemed critical to improved bat field performance for self-propelled a lery, automating some of the slow fatiguing ammunition supply routines providing protection to the resupply cre The slow, makeshift nature of the pre arrangements is seen as a major lim tion on the rates of fire that artillery teries can actually achieve in the fi and the current M548 cargo vehicles five-ton trucks have no armor protect The M992 is estimated to improve c protection by 45 percent and work formance by 13 percent.

Developed by the BMY Divisior



M992 field artillery ammunition support vehicle.

Marsco Corporation, the M992 has a large armored housing in place of the M109 turret, providing protected transport for 93 155-mm projectiles, 99 propelling charges and 104 fuses. The projectiles and charges are carried in removable vertical racks, which are loaded at depots and hoisted aboard by a 1,500-pound-capacity crane with an extensible boom which is mounted at the front of the vehicle.

Projectiles and charges are removed from the "honeycomb" racks by an automatic stacker. Rounds are then assembled and fuzed and passed directly into the supported guns by means of a hydraulic conveyer at a maximum rate of six rounds per minute—twice as fast as the M109-series howitzer can fire. The Army desires to improve this arrangement, so that the operation could take place under NBC threat. A new conveyer is being developed that will allow ammunition transfer with all vehicle doors closed.

Since the M992 uses the same chassis, about 85 percent of the parts are common to the M109, and the FAASV has some features that have not yet been applied to the howitzers—an automatic fire extinguisher, an NBC protection system and automated test equipment for the engine. The vehicle's armor is sufficient to provide protection against small-arms fire and artillery fragmentation. The M992 has an auxiliary power unit and an integral hydraulic pump supplying power for the crane, conveyer and stacker.

The M109 chassis was chosen for the FAASV after a comparative evaluation with a "stretched" M548 and the XM993 chassis based on the M2/M3 infantry/cavalry fighting vehicle. The cargo-carrying capacity of the 28.75-ton vehicle is 2,300 pounds, two-thirds of this in ammunition capacity. Cruising range is 220 miles, and the vehicle can make 35 m.p.h. on roads.

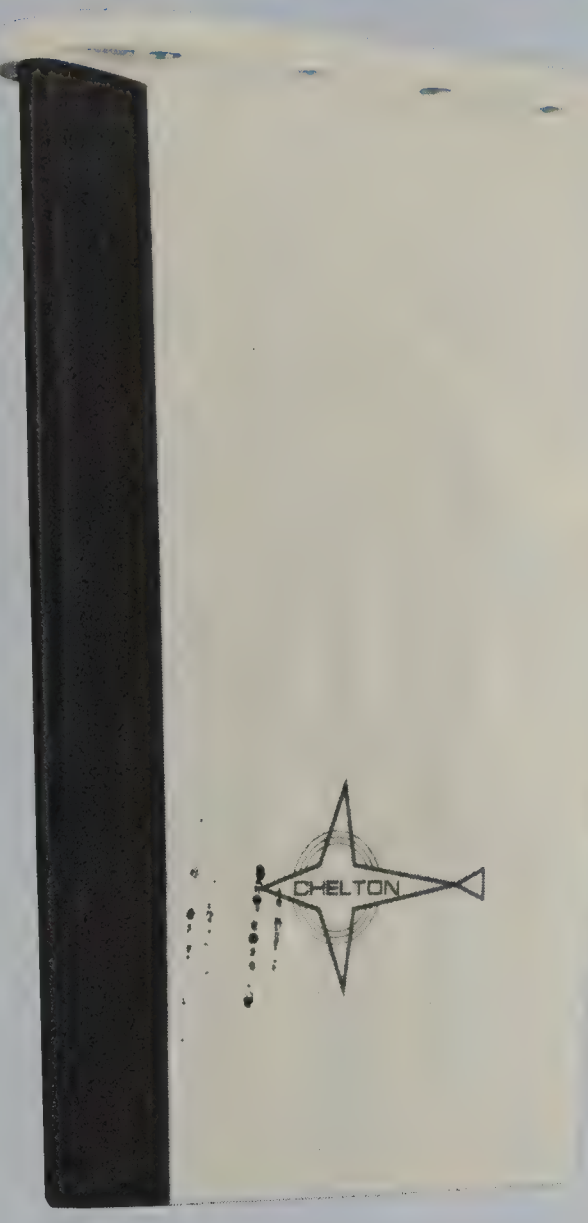
All the M992s purchased so far are for 155-mm ammunition. Six eight-inch versions are being built for test; these can handle 48 projectiles, 53 charges and 56 fuses.

■ **Robotic Obstacle-Breaching Assault Tank (ROBAT).** Designers and fabricators at TACOM's Research and Development (R&D) Center are nearing completion of two prototypes of this remote-controlled mine-clearing vehicle, scheduled for later production as the Army's first countermine vehicles.

This project is part of a joint developmental program which also involves the Army Engineer School and the Belvoir Research and Development Center at Ft. Belvoir, Va., and the Army Armor and Engineer Board, Ft. Knox, Ky.

The ROBAT is designed to accompany assault forces. Under remote control, it will destroy mines by launching rocket-

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propelled lines of explosives. These exp
sives detonate sequentially across the m
field and cause nearby mines to explo
clearing a path for other vehicles. T
ROBAT can then be remotely stee
across this patch to explode any rema
ing mines, while marking the cleared la
with luminescent "light sticks."

The ROBAT prototypes are modi
M60A3 tanks, each with the turret
placed by a large heavy armored h
plate. Two armored pods containing
explosive lines are mounted atop the h
plate.

The crew of two (driver and veh
commander) will sit in tandem, betw
the two armored pods. A stowage a
was designed into the remaining sp
below the crew compartment.

"The design of the base plate is s
that if line-charge ammunition shoud
plode on the vehicle, the roof and
doors would open and the explosion w
go up and out," said Arthur Adlam
charge of advanced combat vehicle
the R&D Center's Tank-Automotive
tems Laboratory.

"Also," he added, "this arranger
allows us flexibility in loading the 1
pound ammunition. Depending on w
equipment is available, a forklift c
load through the side doors, or a c
could lower it in from the top."

Mr. Adlam explained that this RO
configuration differs from earlier prop
conceptual designs, in which the de
and positioning of the pods were radi
different to accommodate special am
nition unique to the ROBAT. The
rent design will use type-classified,
dard ammunition, common to the A
and Marine Corps. He said that this
sion was made to expedite the pro
and simplify logistics.

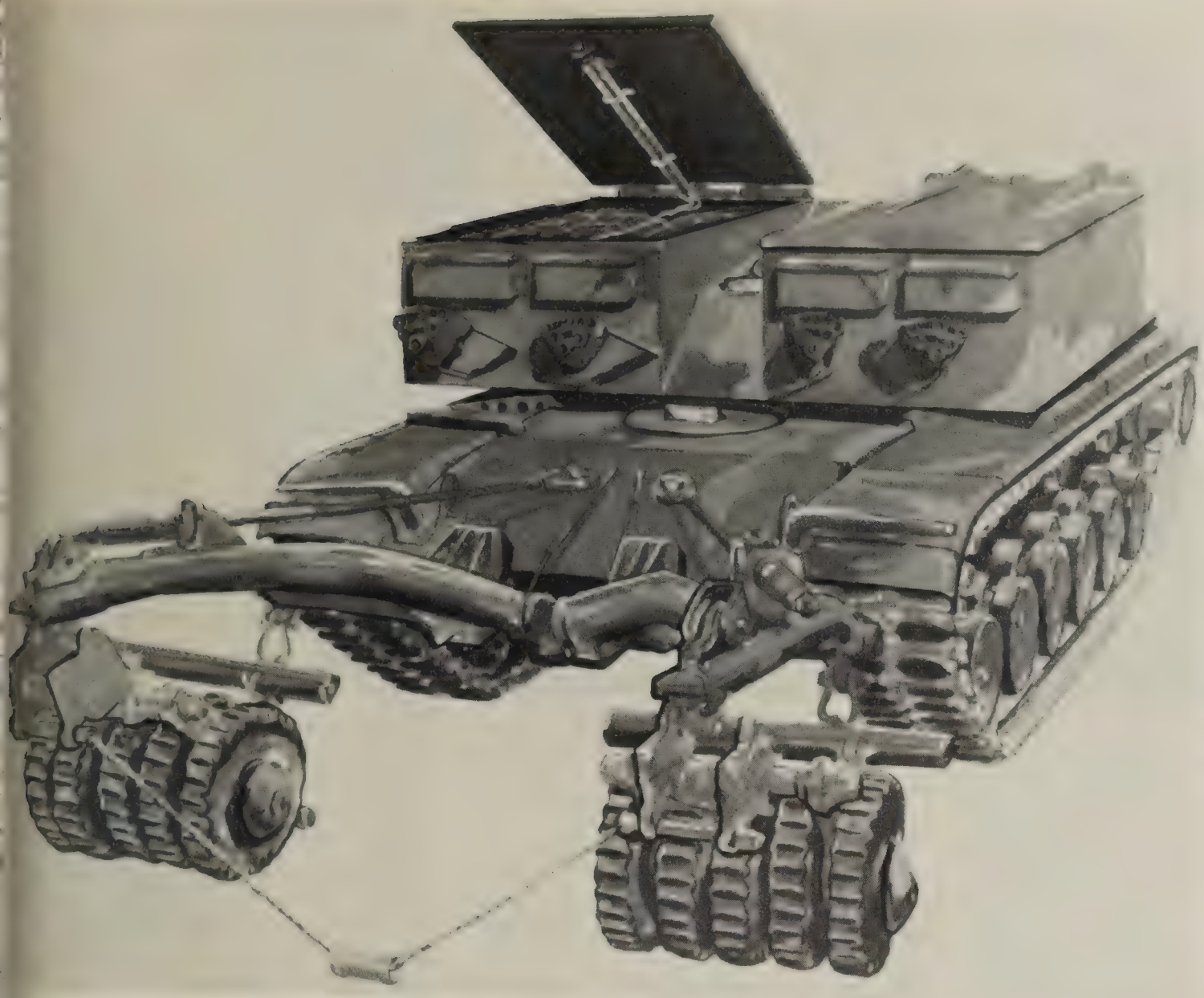
The recent design changes also a
space for the full crew of two to rid
board the vehicle, rather than havin
second crewman in another vehicl
originally planned.

"One crewman can operate the ve
either manually or by remote con
Mr. Adlam explained, "but it takes
crewmen to carry the equipment,
up and perform maintenance on th
hicle."

He said that before going into co
the two crewmen would have five
utes to:

- prepare the vehicle for re
control operation;
- pull out the remote-control e
ment;
- find a suitable protected
where they can oversee the battlef
- drive the ROBAT to the ed
the mine field.

Four other modifications have bee
veloped and are to be applied as
One of these is a mine-clearing roll



Artist's rendering of the robotic obstacle-breaching assault tank (ROBAT), two prototypes of which are now under test.

-a track-width roller, weighing ten tons, hich is mounted on the front of the ehicle. The roller rides six feet ahead of ie tracks and detonates any mines in its ath not destroyed by the explosives.

The second modification is a remote-ontrol kit. This is a radio/fiber optic ontrol system that permits the operator launch explosive lines from a remote cation, control the steering and brak-g of the vehicle and activate the lane-arking device.

The remote-control kit has a feature hich will provide the operator a close-view of where the vehicle is going—a quest by the Engineer School. This is ovided by a television camera mounted the vehicle, with a fiber optic cable hich carries the TV signal to a monitor the remote-control station. With this ature, the crewmen will be able to re-otely operate the vehicle without seeing

A contract for prototypes of the re-ote-control kits was awarded to Robot fense Systems, Denver, Colo., in April.

The third modification is a clear-lane arking kit to be mounted to the rear of ch ROBAT. It is a lightly armored x containing a device which will mark ared lanes for other vehicles by dis-nsing small candles that produce chemi-ly induced light.

An NBC protective system kit is the fourth element of the modification program.

The two prototypes were due to be shipped to Aberdeen Proving Ground, Md., last summer for automotive testing and safety validation with inert line charges. High-explosive line charges cannot be fired there because of noise and concussion restrictions. However, the firing procedures are the same for inert and high-explosive ammunition. Operational testing using inert ammunition is scheduled at Ft. Knox in January and February.

Late this winter, one vehicle will go to White Sands Missile Range, N.M., for electronics tests, and the other to Yuma Proving Ground, Ariz., for firing tests with live high-explosive ammunition.

Immediately after this testing, TACOM maintenance and product assurance personnel will tear the vehicles down to verify that maintenance procedures and manuals are correct.

After completion of successful testing and verification, Anniston Army Depot, Ala., will produce 142 ROBAT vehicles for immediate deployment. Using the complete TACOM technical data package, Anniston will be responsible for the installation of all modifications and kits on the production vehicles.

* * *

Army Troop Support Command (TROSCOM)

■ **Counterobstacle Vehicle (COV).** The Belvoir Research and Development Center, Ft. Belvoir, Va., is developing the COV to overcome both planted and scatterable mines, rubble and other battlefield debris.

The COV's functional subsystems include a combination of mine plow/dozer blade and two telescopic arms which can accept a variety of attachments, including excavating buckets, an earth auger, a hydraulic hammer/pavement breaker, a grapple and lifting hooks.

In combining these several types of engineering equipment into one vehicle, the COV provides combat engineers with a highly mobile and survivable vehicle to conduct mobility and countermobility missions.

The COV design has incorporated several other systems already in the Army inventory or under development. The COV can tow the rocket-propelled mine-clearing line charge, which helps clear safe lanes through a minefield. A cleared-lane-marking system (CLAMS) will mark passage through a minefield for vehicles following the COV. The COV can also push mine rollers such as those in use with main battle tanks.



The prototype cour ter-obstacle vehicle (COV) demonstrate the digging capaci of its bucket-scoop hydraulic arms.

The COV prototype is based on the hull and chassis of the M88A1 armored recovery vehicle. The upper part of the hull has been modified, placing the three crew members in tandem, to make room for the telescopic arms on either side. An escape hatch is located in the bottom of the vehicle beneath the operator's station and is accessible to all three crew members.

The vehicle uses a 908-horsepower, Teledyne Continental Motors turbocharged, air-cooled diesel engine. A 400-horsepower power take-off at the front of the engine drives a hydraulic system which powers the telescopic arms and the mine plow/dozer blade. The standard M88A1 Detroit Diesel Allison transmission is modified slightly to compensate for the high torque at low speed required for mine clearing and dozing.

The M88A1 suspension system is modified to handle the weight of the COV—approximately 66 tons. Higher-strength materials are used for the torsion bars, anchors and spindles. The diameter of the torsion bars is also increased to maintain the same ground clearance as the M88A1.

A remote suspension lockout system provides chassis stability during plowing, dozing and digging operations. The selected design concept consists of steel blocks that pivot into place to restrict the movements of those road wheel tions subject to dynamic loading. L out blocks are positioned by hydr cylinders controlled from within the compartment.

The prime contractor, BMY, comp fabrication of two prototype CO May and is testing the vehicles at Ft diantown Gap, Pa. BMY delivers the totype to the Engineer Proving Gro at Ft. Belvoir this fall for the eng development testing. Testing will co trate on the operation of the full-v plow and telescopic arms in brea complex obstacles.

The clearing effectiveness of the



The AN/USQ-70 PADS (position and azimuth determining system) mounted in an M151 jeep. In operation, the digital display unit which the standing soldier is indicating is mounted on the dashboard bracket.

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width plow will be evaluated to asses advantages over track-width systems. dozer blade will be tested in earth-mo tasks. The telescopic arms will be ev ated in terms of earth-moving produ ity with the excavating buckets and number of mission profiles with the c attachments.

The use of the telescopic arms for recovery will be addressed by evalua the COV's performance in climbing s embankments and near-vertical obsta The Engineer School will conduct a t month concept evaluation program (at Ft. Knox, Ky., to evaluate trai operational effectiveness and suitab The CEP is scheduled to begin in F ary. Following the CEP, the Marine C Development and Education Center MCDEC) will assess the shipboard patibility of the COV. After compl of testing, the program schedule cal production before 1990.

■ **AN/USQ-70 Position and Azi Determining System (PADS).** PAD designed to provide field artillery ca and missile battalions a fast, acc survey system. Mounted in a sta jeep or in an OH-58 helicopter, PA an automatic system which display sition, elevation and azimuth even the vehicle is moving. It provides rate and timely three-dimensional po information and azimuth for use control of field artillery fires. With a man team, PADS replaces a five-ma talion survey team or an eight-mar sion survey party and accomplish same mission at least six times as

The system operates over any t able terrain; installs in the standar with no modification required; surv vehicle speed; operates in any we day or night; displays position in u sal grid coordinates, elevation in and azimuth in mils; and can pe survey during normal preparatory naissance. PADS is self-containe requires no external data.

PADS was developed by the Arr gineering Topographical Laborato Ft. Belvoir, Va. Developmental testi conducted at Aberdeen Proving G Md., and at Ft. Greeley, Alaska. tional tests were conducted at F Okla., to test operation and maint by Army personnel and to verify books, field maintenance concep test equipment, and helicopter sur curacy.

The initial production order f systems was placed in July 1979 w ton Guidance and Control Systems, land Hills, Calif. The first pro units were delivered in July 1981. of 371 PADS units have been pr to date for the Army and Marine and more than 100 have been pl the field.

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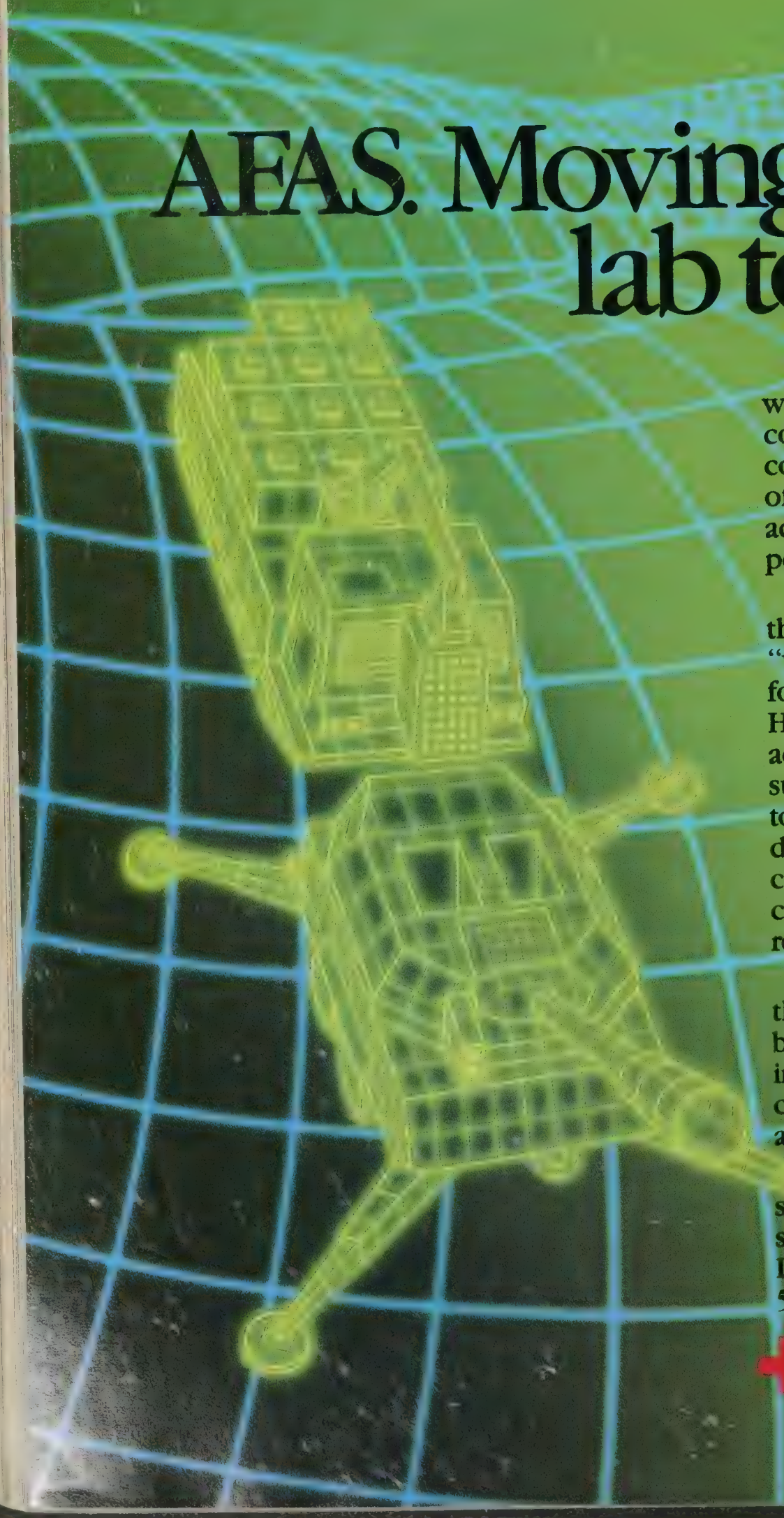
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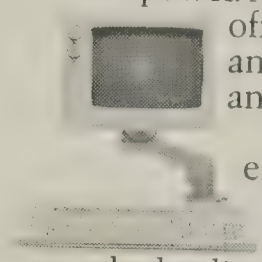
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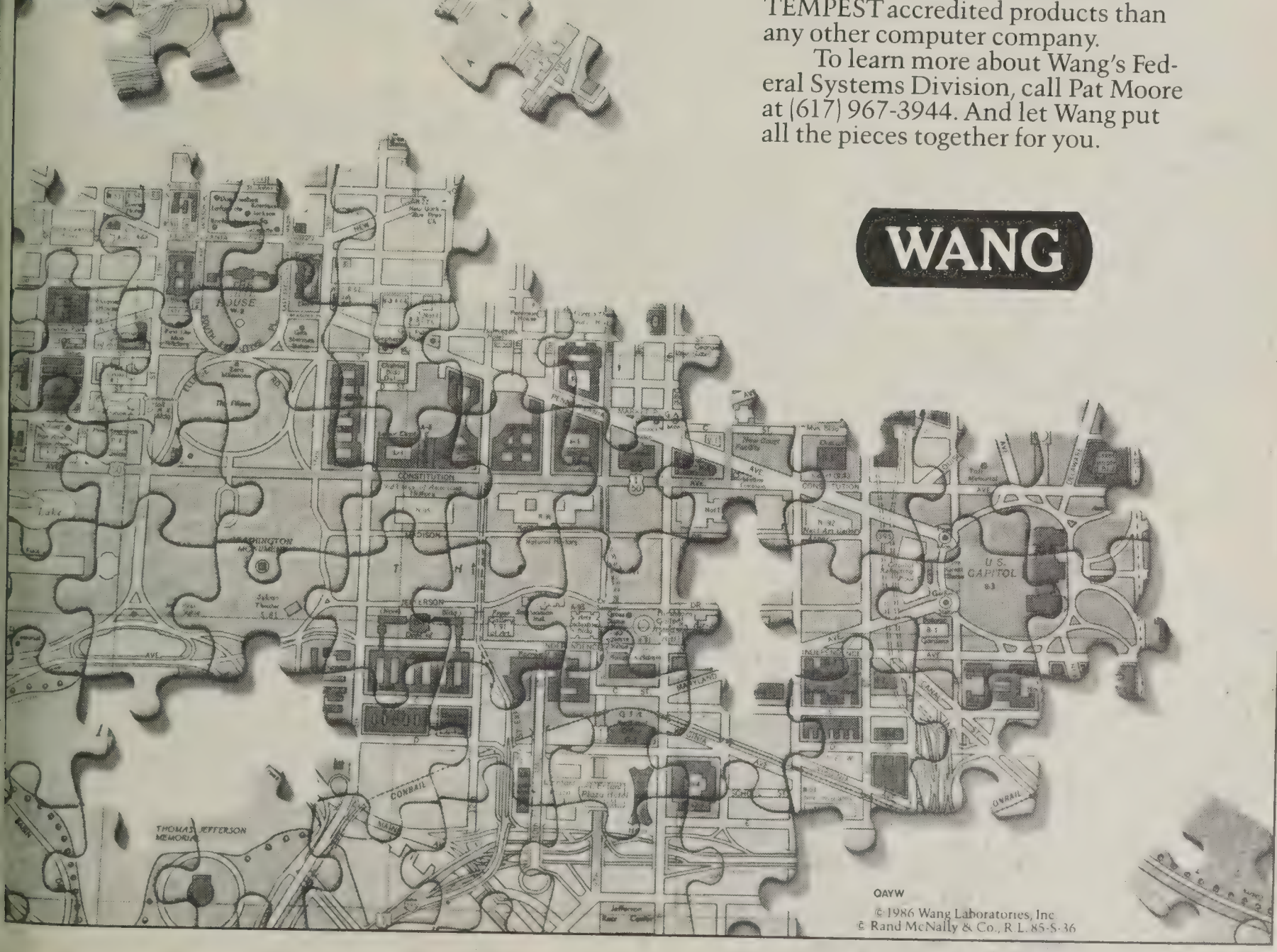
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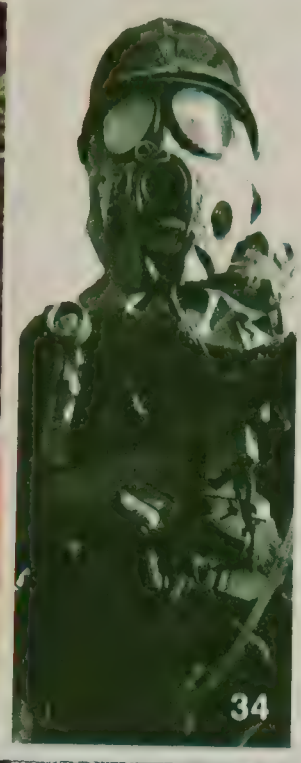
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ARMY
The Magazine of Landpower

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Ethical Leadership in the Army: Getting It Right

■ I most heartily and enthusiastically ndorse the views of Col. William P. oyd, U.S. Army, retired, on integrity as et forth in his article "Men of Charac- r, Principles of Honor?" in the Septem- er issue.

His experiences so exactly parallel my wn in my five years of active service, icluding Vietnam, that it is almost as if could see myself.

In addition to my active duty (1967–972), I have served for over 28 years in ie Army Reserve and the National Guard s an officer.

Letters

I have found that all of the compo- nts of our Army have far too many of e types that Col. Boyd has described in s very excellent article.

I wish there were people like him serv- g on active duty in three- or four-star atus to make on-the-spot corrections of ese abuses.

MAJ. GEORGE BAKER
U.S. Army Reserve
uth Weymouth, Mass.

■ The article by Col. William P. Boyd, S. Army, retired, entitled "Men of Char- ter, Principles of Honor?" (September) ovided welcome emphasis on our need competent, loyal and honorable lead- hip in the Army. I read with interest exposure of careerism and his support selflessness.

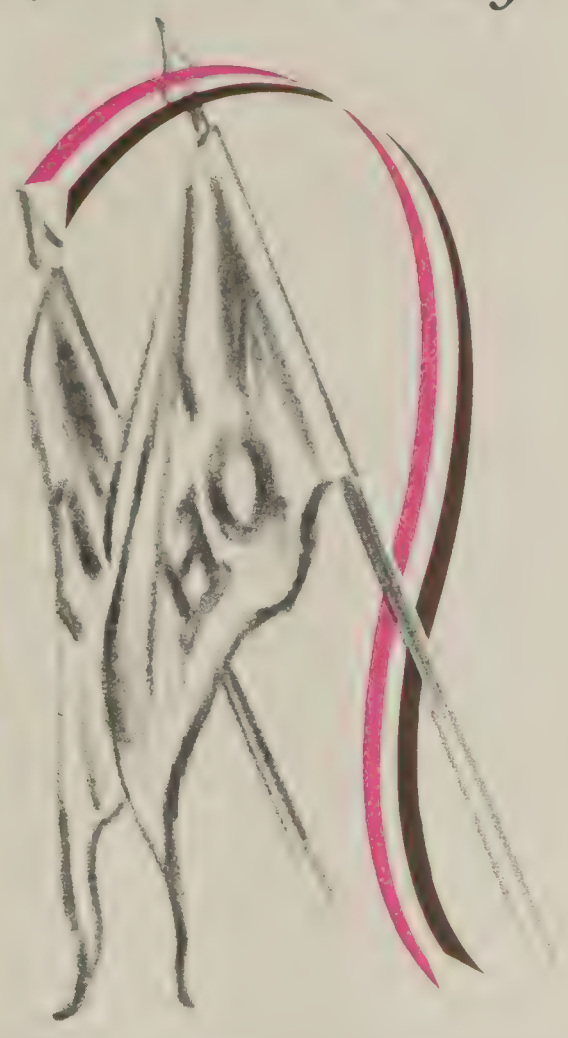
I found it hard to believe, however, at he proposes to "make the OER [offi- evaluation report] confidential." This s squarely in the face of the selfless- s he wants to promote.

t is the self-centered officer that does have the guts to review his subordi- e's OER with him. The truly selfless der will not only perform the periodic formance counseling that Col. Boyd gests, but will also ensure that he re- ws his final evaluation with his subor- ate face to face.

Col. Boyd's recommendation would y serve to foster irresponsibility bor- ing on the unethical.

MAJ. DON T. RILEY
Leavenworth, Kan.

Col. William P. Boyd, U.S. Army, red, appears to have many axes to d in his September article ("Men of aracter, Principles of Honor?"). His rence to Maj. Peter G. Paulson's *Ar- Times* article comparing civilian to tary permanent change of station pay-



ments is off-target as an Army integrity issue. He should know that such payments are based on law, not Army policy. Also, as a 30-year careerist, he should realize that comparison of civilian and military benefits is an "apples and oranges" situation. To take a particular and perhaps isolated case and imply that it is representative is fallacious reasoning that only aggravates "us and them" misperceptions.

WILLIAM F. RYAN JR.
Camp H. M. Smith, Hawaii

■ I read with great interest the article by Col. William P. Boyd, U.S. Army, retired, entitled "Men of Character, Principles of Honor?" which appeared in September.

Especially noteworthy were his three categories of officers who get ahead.

My only question for Col. Boyd is this: why was your article published after your 30-year retirement and not years ago?

JEFFREY A. ADAMS
Schofield Barracks, Hawaii

■ In his thought-provoking article "Men of Character, Principles of Honor?" (September), Col. William P. Boyd, U.S. Army, retired, refers to a character from the late Al Capp's comic strip "Li'l Abner."

The figure he remembers as "Bull Moose, the corrupt senator millionaire" was actually two persons, each a satirical stereotype in his own right. One was General Bullmoose, an unscrupulous industrial tycoon whose motto "what's good for General Bullmoose is good for the country" paraphrased an actual statement about General Motors once made by a former president of that corporation. The other was Senator Jack S. (Good old Jack S.) Phogbound, the venal legislator who was, indeed, reelected again and again by the citizens of Dogpatch.

KLAUS HALM
East Point, Ga.

Book on Volunteer Army Praised

■ I recently reread Lt. Col. Robert K. Griffith's book, *Men Wanted for the U.S. Army: America's Experience with an All-Volunteer Army Between the World Wars* (Greenwood Press, 1982) and commend it as a fascinating and sobering study of what can happen to a military force when it is forsaken by the country it defends.

This important and highly perceptive work analyzes U.S. defense manpower procurement policies and performance during the first part of the twentieth century. It does much more, however, than merely examine the failures and successes of the volunteer Army of this era. It provides an interesting insight into the political, economic and sociological conditions of that period of American history, as well as an intriguing glimpse of the "Old Army."

The book looks at four specific times: the post-World War I period; the 1920s to the onset of the Great Depression; the depression years in the early 1930s; and the late 1930s when World War II loomed over the horizon.

Looking back, it is difficult to realize that Congress, accurately reflecting the feelings of the majority of the American people during the interwar years, intentionally ignored the Army and deliberately discriminated against its uniformed members.

For example, the authorized monetary allowance for the daily ration per soldier was much smaller for the Army than for the Navy and Marine Corps. During the 1920s, squalid, dingy and scarcely habitable barracks for soldiers and slum-like quarters for married officers and noncommissioned officers were but another factor causing high desertion and resignation rates as well as low retention.

The Army was horse oriented and equipped with ancient, obsolete arms and outmoded equipment. The astonishing wonder is that this Army, held in such low esteem by its countrymen, produced the superb leadership that led America and its Allies to victory in World War II.

Does this mean that soldierly virtues

and martial skills flourish only in adversity? This phenomenon would be a worthwhile subject for historians to explore and ponder.

Older military men reading this book will enjoy a nostalgic visit to the Old Army of pre-World War II days while younger readers will be surprised to discover that there is not much new today with respect to the problems of recruiting and retaining quality personnel for the Army that was not already well known in the 1920s and 1930s. Indeed, one of the major findings of this book is that the principles of maintaining a volunteer Army learned in those decades past were forgotten until the 1970s when the Army once again returned to a volunteer state.

Lt. Col. Griffith's well-written, well-organized and highly readable book makes a unique contribution to existing literature concerning America's experience with volunteerism and its armed forces. It should become the standard reference on the subject for the interwar period. It also constitutes a major contribution to the history of the Army during the interwar period, a time that deserves and, I am hopeful, will attract more attention from contemporary military historians.

GEN. BRUCE PALMER JR.
U.S. Army, retired

Alexandria, Va.

Super Grades Criticized

■ Retired Army Col. T. G. Quinn's excellent but too-late defense of specialist grades ("Specialist Grades Defended," "Letters," September) contains the statement that "super grades [E8/E9] were devised to fill a very limited need." Limited indeed. The purpose was to open up promotions because the grade of E7 had been frozen since 1946, except for wartime promotions on the Korean peninsula.

The super grades were not created because of a staffing need. We started looking around for positions *after* the grades were authorized by the 1958 pay act. I am not certain we have yet found useful employment or even established a need for the super grades. After an entrenchment of 27 years, Col. Quinn's "drastic surgery" is not likely to occur.

D. G. SANDSTROM

Indianapolis, Ind.

Is This 'for Real'?

■ After reading and rereading Maj. Michael L. McGee's "In Search of the Ideal Leader" ("Front & Center") in your September issue, I came to the conclusion that the article was a complete hoax. All that mumbo-jumbo about "ExcelNets," "M-BTIs" and "ENFPs" left my head spinning. None of that could be for real, could it?

This opinion was shaken to a degree when I determined that there really is a Center for Creative Leadership in Greensboro, N.C.: at least there is a telephone number for such an organization. How this group came to be "testing" brigadier generals might bear some explanation.

But what really put me off was the thought "that the Army needs a command track, a system that lets the best commanders command, instead of the best officers." That is a contradiction in terms! It was always my experience, during long service, that the Army's best commanders were its best officers. I do not for a minute believe that this has changed since I retired.

The "adage" (?) at the end of the article, "Wars are not fought by the existing leadership . . . warriors will come to the forefront, bypassing the bureaucrats," apparently expresses the author's opinion that the Army is commanded by "bureaucrats" now, but that "warriors" will be placed in command during the AirLand Battle.

I suggest that the warriors are in command now for the most part and that it is the bureaucrats who are running the ExcelNets, the M-BTIs and all the rest of what I labeled mumbo-jumbo.

COL. G. W. SCHULZ
U.S. Army, retired

Austin, Tex.

ARMY **invites letters to the editor. The subject matter may be about material that has appeared in the magazine or about any topic which the writer feels would be of interest to *ARMY* readers. The editors reserve the right to edit letters for reasons of style, accuracy or because of space limitation. All the letters must be signed, and while we prefer to carry the writers' names we will consider requests for withholding them if there is a compelling reason to do so.**

The Editors



"Hut, two, three, four, hut, two, three, four, hut, two . . ."

■ Maj. Michael L. McGee's articl the September issue, "In Search of Ideal Leader" ("Front & Center"), lam ing a shortage of ENFP (for *e*xtrovert tuitive, *f*eeling, *p*erceptive) officers "perhaps" advocating a command for ENFP types missed two points.

First, there are few ENFPs in the p lation, less than five percent. But w according to a recent issue of the n letter "The Type Reporter," ENFPs renowned for their difficulty in con ling their weight. This fatal flaw has p ably resulted in the expulsion of t porky rascals from our ranks!

Let us also expunge template ev tions and fortune cookie psycholog means of selecting our future comm ers. Better, let us continue to mov those officers who are "Men of Char with Principles of Honor" as our ch staff espoused and as Col. Willia Boyd, U.S. Army, retired, applaud his article in the same issue: ther plenty of them in our ranks, thank

LT. COL. KENNY W. WHIT Springfield, Va.

Not Just Howard University

■ The excellent article by Geral land on the exploits of Oliver Otis ard, "The Christian General" ("Sta Peace," September), goes a long wa ward shedding some light on the complex soldier who contributed t founding of Howard University. I fact that his personal philosophy ar ligious zeal evoked a wide range of tions from superiors and subord and made him a controversial figu

Maj. Gen. Howard initially resist forts to name the university after hi cause he felt that such close ties provide his enemies in Congress and in Washington with a target. He t out to be right. He was accused of cial mismanagement and improper ness practices while helping the univ and was later cleared of all charg

One point made by Mr. Weland, ever, should be clarified. It is tru Gen. Howard is not as well kno other military leaders of the da Howard University is not the "onl gible memorial" to the general. His state of Maine raised the money sary to construct an equestrian sta him at Gettysburg to honor his ga on that battlefield. Some of his pe papers are preserved in the libr Howard University. Most of his are at Bowdoin College in Brun Maine, where he earned an A.B. before attending the U.S. Military emy.

Other tangible memorials to Gen ard also exist. His portrait hangs lum Hall at West Point. A plaque ing him as the 20th superintendent



icademy also hangs in Cullum Hall. An-)ther portrait hangs in the superinten-lent's office, along with those of the oth-r superintendents. Just off Thayer Road ıear the Plain at West Point is Howard Road.

I would hope that those at Lincoln Memorial University in Harrogate, Tenn., emember Gen. Howard, given that he vas also instrumental in establishing that niversity. He pushed to name it after Abraham Lincoln because the president vas his personal hero and a subject of is frequent lectures given throughout merica and Canada. He once noted hat President Lincoln told him during ne war to be especially sensitive to the eople of the Tennessee mountains.

The numerous books he wrote, his ountless articles, the causes he spoke or, the funds he raised to support his vorite causes, his 40 years as a soldier, nd the value he placed on God, family, ation, virtue and duty are still meaning-l, even if known only to a few.

Not many generals from any period of ur history have had as complex and as aried a record. Serving as an ordnance fficer, an assistant professor of mathe-atics at West Point, the tutor for Super-tendent Robert E. Lee's children while West Point and a battlefield general ith less than ten years of service made m unique. Winning a Medal of Honor, rning the thanks of Congress, founding church and two universities, heading a deral bureau, holding the top field com-ands in the Army, serving as West Point's perintendent and trying to be a peace-aker made him special.

LT. COL. FREDERICK H. BLACK
est Point, N.Y.

■ Thanks to Gerald Weland for an eresting and informative article about aj. Gen. Oliver Otis Howard ("Stalk-; Peace," September); however, it must noted that Howard University is not "only tangible memorial." The Maj. n. Oliver Otis Howard U.S. Army Re-ve Center (located at 1072 Minot Ave., burn, Maine 04210-3797) was memo-lized in his name at the time of its nstruction—about 25 years ago. It is largest USAR center in northern New gland, housing a hospital unit, a trans-tation company and a rifle company. I am sure that there are many present and former USAR members in his native state of Maine who remember the story of Gen. Howard.

COL. WILLIAM L. SMART
Army of the U.S., retired
Portsmouth, N.H.

East and West Germany

■ The article in the August issue, "The Fence: Where Freedom Ends and Subjugation Begins," by L. James Binder takes me back 35 years. In 1950, a group of us being assigned to the 24th Constabulary Squadron (Circle "C" Cowboys) pulled into the train station at Bad Hersfeld. When the greeting officer turned out to be the squadron chaplain, we all began to have our doubts about being stationed at "The Rock." I was assigned to Baker Troop and my lessons in border patrol began. For roving patrol, we used the two-jeep patrol: one machine gun jeep and one radio jeep.

The idea of what was really on the other side of that border stayed with me, so when in 1952 I had the chance to be stationed in East Germany at our Military Mission in Potsdam, I grabbed it. Then, I could look back west across the border where I used to be looking east. To say the assignment was interesting would be an understatement.

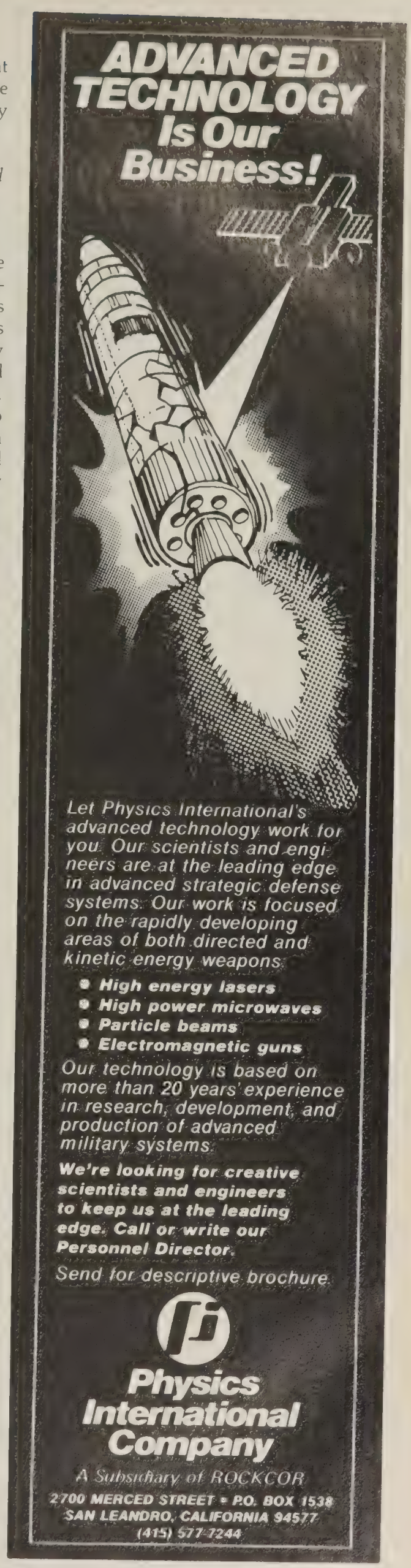
1ST SGT. HUGH B. GLASS
U.S. Army, retired
Lawton, Okla.

Helicopter Expertise

■ I do not understand why two generals and an under secretary of defense feel that they are wiser than all the helicopter experts. I have flown helicopters as a cavalry scout while I was in the Army and I can state from experience that helicopters flying nap of the earth (NOE) need two pilots. I am also an engineer who is very familiar with computers, in that I work with them every day, so let us get this "fear of computers" nonsense out of the way. Computer terminals and heads-up displays might work fine for an F–16 pilot 50,000 feet above the nearest tree, but a helicopter pilot flying NOE cannot take the time to concentrate on a screen and get the information needed without hitting a tree.

This brings me to a more important question: why do the Army and the Defense Department in general insist on all these "high tech" gadgets anyway? The more electronic devices on a weapon system, the lower the availability rate. It is worthless to have an attack helicopter that is twice as effective as the one it replaces and costs three times as much but has half the availability rate. You are back where you started from.

Is a $200,000 electronic sight that can see through smoke and darkness but can-



not see through rain, fog or the mud that splashes up on a turret of a tank really 40 times more effective than a $5,000 optical periscope? More faith must be placed in the individual soldier and more money spent on his training and less on gadgets that do not have the bugs worked out yet.

WILLIAM B. ANDERSON
San Jose, Calif.

Titles and Identity

■ Here is one colonel who has no identity problem. In fact, I am somewhat offended by the article "Please Don't Call Me 'Mister' " by Col. Melvin H. Rosen, U.S. Army, retired, ("Front & Center," August) because it lends some credence to the general belief that there is such a thing as a "military mind," that senior officers are always status/position conscious, cannot adjust, are inflexible, dogmatic, *ad infinitum*.

I agree with part of the thesis that once a career soldier, always a soldier. I will never get rid of the smell of gunpowder, the pride when I hear the national anthem or the Army green in my blood. But employers and most others want to know what you can do *now* and in the future—substance not platitudes. Most do not know the difference between a colonel and a commander, and more important do not care.

All I want is the opportunity to succeed in my new career and recognition for the contribution I am making now. I am not particularly concerned about what they call me (most of the time it is "Al").

COL. AL WOLFGANG
U.S. Army, retired
Carmichael, Calif.

■ Retired Army Col. Melvin H. Rosen's concern for his title in "Please Don't Call Me 'Mister' " displays his need for impressing those Army contractors for whom he consults ("Front & Center," August). I am sure having "Col. Rosen" as a consultant is worth more and is more impressive to potential buyers than having "Mr. Rosen" on the payroll, but I teach in a two-year technical college (with several other retired colonels on our faculty), and asking our students and fellow faculty members to address us as "Colonel" strikes me as being more than a bit pompous.

I am proud of my eagles, and if I am ever called back on active duty during a military emergency (God forbid!), I expect my green-suited associates to call me "Colonel," but for now, "call me 'Mister.' "

COL. H. W. LACQUEMENT
U.S. Army, retired
Greenville, S.C.

■ As I started to read the article by Col. Melvin H. Rosen, U.S. Army, retired, ("Please Don't Call Me 'Mister,' " "Front & Center") in the August iss my head was nodding in understandi until I turned the page. He seemed have forgotten his subject and launch into a diatribe on "Regular versus R serve."

May I offer some specific comments clear the air? I grant that I have o been on the retired list since 1982, bu have yet to receive correspondence fr any military office not addressed to by military title.

For the more than 42 years, active a active Reserve, that I spent in the N York Army National Guard, I and m of my associates were as professiona competent in our avocation as most R ulars were in their vocation. So how we define a professional officer?

Mobilization orders are not the dom of retired Regular Army officers. I h had "hip pocket" orders ever since I in cated my availability. I do grant t Regulars are subject to involuntary call by the secretary of the Army, b would be interested in knowing the time this happened without a similar for some reserve components.

Those who know do not call me "N ter."

COL. GUNNAR G. F. PEDERSE
Army of the U.S., retired
Clifton Park, N.Y.

■ Col. Melvin H. Rosen, U.S. Ar retired, started with an excellent p about titles and identity ("Please D Call Me 'Mister,' " "Front & Cent August). Unfortunately, he diverted a "hooray for us Regulars" exposi that was all too familiar.

If Col. Rosen believes that the ca force is Regulars only, that the res components are less professional and worthy of their titles of rank, and t are no retired Reservists with mobi tion orders, perhaps he should quit sw ing his restricted sales opportunities read "Reflections on 60th Reunion," Maj. Gen. A. S. Newman, U.S. A retired, in the September issue.

LT. COL. MORGAN V. JONES
U.S. Army Reserve, retired
Fogelsville, Pa.

The First 60 Days in Korea

■ John Hoyt Williams's excellent vey of the first 60 days in Korea ("S or Die," August) brought back m memories and a few nightmares of period when I served as a lieutenant captain in the 1st Cavalry Division A lery. If anything, the situation was worse than he depicted, particularl to the odds involved.

The map accompanying the articl picts the forward edge of the battle (FEBA) as a solid line, which is mis ing as there were numerous gaps in



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line. Even if all the companies had been deployed on the FEBA, which they were not, each company would have had a front of over two miles since the U.S. sector was over 70 miles long. Actually, the frontages were even larger, since many of the companies, particularly in the 24th Division, had been severely mauled. I recall that one company in the 5th Cavalry Regiment had been reduced to one officer and seven men by the time we retreated across the Naktong.

Initially, along the Naktong there was a ten-mile gap between the south flank of the cavalry and the north flank of the 24th Infantry that was screened only by a brigade of Korean National Police armed with carbines and light MGs. Fortunately, the enemy never attacked through the gap.

There are some minor inaccuracies in the article as it pertains to the 1st Cavalry.

Describing the action in early August, Mr. Williams states that, "for several days the 1st Cavalry had to fire in opposite directions against the attacking foe." This was not so, as the terrain forced the deployment of the artillery well to the rear and in no instance during the defense was a battalion required to fire in the opposite direction.

Later, in describing the action of 12 September, the article states, "There was no preliminary bombardment because there were no 105-mm shells. . . ." This is an error, as the division artillery never even approached being out of ammunition during the defense. As I recall, at that time, in addition to two 105 direct-support battalions in the area, they were reinforced by two batteries of 155s, a battery of eight-inch howitzers and two battalions of 90-mm antiaircraft guns and a company of Pershings deployed in an artillery role.

The ferocity of the battle can best be understood by noting that when the breakout occurred in the latter part of September all the rifle companies were below 50 percent strength, the engineer battalion and the division band had been committed as infantry and the combat and service support units of the division had been drawn down significantly to provide individual infantry replacements.

Again, thank you for an excellent article on what has to have been one of the Army's finest and proudest actions.

COL. JOHN J. BETZ JR.
U.S. Army, retired
Gig Harbor, Wash.

■ I recently read John Hoyt Williams's article, "Stand or Die" (August). Mr. Williams mentioned the 24th Infantry, 25th Infantry Division, only in the negative when he stated that they broke under the North Korean People's Army's assault. He failed to mention that our tank support was no match for the Russian tanks.

I was assigned to Company M, 24th Infantry Regiment, between May 1948 and April 1951 and was proud to have served in that organization in Korea. I do not feel that the 24th Infantry deserved this description.

RICHARD D. SANDERS
Stone Ridge, N.Y.

■ I read with considerable interest the article by John Hoyt Williams, "Stand or Die" (August). Having been in Korea with occupation forces in 1948–1949 when the 5th Regimental Combat Team (RCT) was born again and returning with the 5th RCT from Hawaii in July–August 1950, it brought back memories.

Any history or perspective of that conflict, especially in the August–September time frame, should have much more about the Wolfhounds and the 5th RCT. One or the other of these outfits was called on constantly to plug the holes or put pressure on to relieve pressure somewhere else in the Pusan Perimeter.

The 5th RCT, not being a permanent unit of any division, found itself in the 25th and 24th Infantry and the 1st Cavalry Divisions in those first few months. Each division made maximum use of its full strength and outstanding leadership. We were used extensively by all three divisions and were proud of it.

COL. WALLACE F. VEAUDRY
U.S. Army, retired
Columbus, Ga.

Towards the Goal of 'One Army'

■ Col. James W. Shugart's article "Needed: A Workable Definition of 'One Army' " did an excellent job of highlighting some of the areas where the Army Reserve continues to fall short in terms of true readiness; however, as a former active Reserve Troop Program Unit member and also a former civilian Army Reserve technician, I feel that Col. Shugart overlooked one of the major components of Army Reserve readiness: the civilian technician staff. These people are Civil Service employees who work full time in support of the "part-time" Reserve unit commander and staff.

Approximately six years ago, the opinion of Headquarters, Department of the Army, was that this civilian staff did not provide adequate support. The solution implemented was to assign military technicians, reservists on active-duty tours, to selected units. In some cases, these reservists augmented the full-time civilian staff; in other cases, vacant civilian positions were converted to military slots and these reservists were assigned to them.

In many cases, these military technicians lacked the training and experience of their civilian counterparts, but by virtue of their relatively higher milita rank were often assigned to supervise t civilian staff, who then had to train the supervisor in addition to all their prev ous assigned duties.

Col. Shugart stated that it is now t intention of Headquarters to replace t active Army Reserve unit advisors wi the aforementioned military technician Part of what a regular Army advisor brin to a Reserve unit is his or her years experience working at the mobilizati mission of the Reserve unit to which a signed. Military technicians generally la this experience. Furthermore, the coor nation performed by these regular Arm advisors with various Army installatio and headquarters could hardly be do as efficiently by someone unfamiliar w the ins and outs of regular Army ope tions.

If Headquarters wishes to have a mo ready Army Reserve and to continue pl ing reservists on active-duty tours, t best way to accomplish both objecti would be to place reservists on extend active duty with regular Army uni This has been done recently, but only a limited basis, with just Reserve comb arms officers assigned as company co manders to line units in West Germa To be fully successful, such a progr needs to be expanded to all branch with continental U.S. assignments ma available that would permit a reserv the opportunity to serve an active d tour at a nearby Army installation, t avoiding relocation and the problems sociated with it.

In short, adding more civilian tech cians to existing support staffs wh needed, keeping regular Army advis and providing reservists the opportun to serve with regular Army units bring all components closer to the g of "One Army" than previous or p posed programs have or will.

MAJ. JAMES E. KEN
U.S. Army Reserve
Red Bank, N.J.

■ It was excellent that Col. Jamo Powell took the time to write the art "Readiness Groups: What Are The (June), but unfortunately he has revea one of the glaring defects of the U.S. my—the fact that people can bec O6s and still be ignorant of the A Reserve and National Guard.

My first contact with a readiness gr came in 1970 while commanding a tr portation company of an Army Res training division. All company comma ers in the unit were combat zone ve ans. The battalion commander was a rean War veteran and had many yea service. I found it almost humiliating as an O3, I had to get approval for e order from a 2nd lieutenant fresh f

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Aberdeen. It was probably worse for the battalion commander! About the only real contact I had with the readiness group was to supply rations to our unit when it went to the field.

Since that time, I have spent most of my Army Reserve service with a Maneuver Training Command. I progressed from O3 to O5 in the unit. I was on numerous exercises for combat, combat support and combat service support units. I met many "senior" active Army officers who felt they knew it all. After all, they were the active Army.

In most cases I bit my tongue and remained silent about what was what in the Army. I say this because as a 2nd lieutenant, I was one of the officers who installed our nuclear weapons control systems in the early 1960s. As a 1st lieutenant, I was the commander of the Military History Detachment that wrote the official history of the move of our logistics base out of France. I read virtually every top-secret document on the defense of Central Europe. In 1978, I wrote to the Joint Chiefs of Staff to determine the classification of the material and was advised it was still current and still top secret. Much of the time, I found myself advising the active component people.

We had numerous other Reserve officers who in civilian life were full-time personnel at Ft. Knox and were developing the doctrine on armor. While working as ordnance research engineers at Battelle Laboratories, we had access before the intelligence community to scientific and technical developments that would affect the military. Yet I was just an Army Reserve major, so when I hit the field, I acted duly impressed by O5 active Army.



If the Army Reserve were to be reorganized with the readiness region/Maneuver Training Command designated as a corps headquarters, the Reserve troops in the region who would make up the corps troop would be better prepared and trained. This would also provide the opportunity for meaningful training to otherwise unused intelligence units and might even enable some technical intelligence units to get organized and begin to function.

LT. COL. WILLIAM L. HOWARD
U.S. Army Reserve
Spring Lake Heights, N.J.

Alphabet Soup

■ I recently attended the fine symposium on Joint Operations in support of the AirLand Battle at Carlisle Barracks, Pa. The organization and content of the presentations offered an excellent opportunity for those of us in industry to see how two services can work together towards a common goal. I did find one baffling and perplexing mystery. The increase in "alphabet soup," which now abounds in presentations about command, control, communications and intelligence (and some tell me, computers will soon be added) absolutely astounds me.

The AirLand Battle has created new terminology for describing the functions of warfare. *Field Manual 101-5* does an adequate job of explaining the addition of the operational concepts of agility, synchronization, depth and initiative. The presentations, however, offered an alphabet soup of terms, acronyms and diagrams which exhort the commanders to "see and swarm" (among others). To my way of thinking, this complicates, not simplifies, the explanation of the command and control process.

Command and control is the single most important process which takes place upon the battlefield. The proliferation C³I systems in the field of battle mana ment was addressed recently by G Glen K. Otis at a U.S.-NATO commu cations-electronics conference, as rep ed in the May issue of *Signal* magazi He commented that there were some major systems being fielded in Eur which dealt with C³I, and he was sure that so many were absolutely ess tial to the control of his forces.

It is my contention that the emerge of many new terms (and other alpha soup acronyms) stems from a lack of miliarity with basic principles taugh service schools. It encourages a Madi Avenue tendency to coin new phra rather than relating the new conc and systems to current doctrine and tics. Let's focus on command and c trol as *the* most important process. change terminology only where neces to explain a process if existing princi and the decision cycle appear to lack cificity.

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leven Units to be Added in Fiscal 1986

J.S. Army Regimental System Back on Track

By Eric C. Ludvigsen
Associate Editor



Front & Center

he Army has resumed the formation . of combat arms "regiments" under new manning system (NMS) after a use of more than a year to sort out the ects of major changes in the service's ce structure. Plans have been announced the creation of 11 more regiments dur- this fiscal year for a total of 26 when ded to those formed during fiscal 1983–

ll combat arms soldiers at appropri- points in their careers are allowed to liate not only with these first 26 regi- nts but with any one of at least 82 ers now scheduled for future forma- , including some whose colors will gnate only training units or one of battalions or a single company or ery in the field Army. This marks a or departure from the original 1983 is for the U.S. Army Regimental Sys- (USARS), under which affiliation ld have been limited to the large regi- ts with links between multiple home- d and overseas battalions.

nce the range of choices is thus great- roadened, the Army is requiring all bat arms soldiers to select the regi- t with which they wish to be affiliat- o later than the end of the fiscal year October, 1986. About 28,000 sol- are affiliated with the 15 regiments ed so far.

ith the exception of the 2nd, 3rd and armored cavalry regiments, which been organized as tactical units since the USARS arrangements are ad- trative rather than operational, the being to foster a sense of belonging gh continuous association with the ic traditions of a particular regi- . In the full-scale regiments with l home and overseas battalions, the will attempt to make assignments the regiment as often as possible at soldiers and their families will a more stable situation at the regi- s stateside home base.

USARS also provides a framework e rotation of company-sized units eventually, entire battalions, which promote unit integrity and collec- ills learned in training. In fact, the Army will begin a pilot battalion rotation program next summer, involving exchanges between four stateside combat arms battalions, three in West Germany and one in Italy.

New soldiers are automatically affiliated with a regiment when they are assigned to it or if they are unit members at the time of organization under the USARS. They will be expected to state a regimental preference at the end of the first enlistment, but affiliation can be changed at a later time. The Army has reserved the option to limit switches if a few regiments become overwhelmingly popular and upset the balance of the system. So far, this has not been necessary —relatively few changes have been requested by soldiers now having a regimental affiliation.

The system will have relatively little impact on the assignment patterns of officers until they reach field-grade rank. The Army encourages the greatest possible variety of assignments for younger officers, and that is difficult to achieve in regiments which link like-type battalions (e.g., mechanized infantry, 105-mm field artillery or Patriot air defense missile units).

The full-scale regiments have regimental adjutants to administer personnel and family matters, and most will eventually have an honorary "colonel of the regiment"—usually a distinguished retired soldier with a special association with the unit—to look after regimental traditions. Whatever their current assignment, members of a regiment will wear its distinctive insignia above the right breast pocket of the blue, green and white uniforms.

The decision to allow more regimental designations to remain in the field Army eases considerably the pain of having to select a relatively small number. As many as 177 regiments have had elements on active duty among combat units of the Army since 1957 when the Combat Arms Regimental System (CARS) was adopted to restore and perpetuate the regimental lineages of an Army which—with the notable exception of infantry—had been organized in separately designated battalions since the middle of World War II. Under the 1983 plan, only 65 regimental "flags" would have been retained in the field forces, the balance being transferred to schools and training centers where units usually have generic, local designations.

The Army had the unhappy task of judging which of the CARS regiments had the most distinguished histories and traditions (all of them have at least one battle honor, which was the minimum criterion for retention in CARS). Rank-orders were developed by the Office of the Chief of Military History (this list tended to honor age) and the military history faculty at the U.S. Military Academy (which tended to emphasize service in twentieth-century wars). These were further modified by the Office of the Deputy Chief of Staff for Operations and Plans to account for other factors, such as the need to connect like-type battalions and preserve at least some of the historic associations between certain regiments and divisions. The final list showed 27 infantry colors, six drawn from the air defense artillery, 21 from the field artillery and 12 from armor.

The USARS blanket was not nearly large enough at that time, however, to cover all of the CARS corners, and the resulting compromise left most observers with an interest in the historic traditions of the Army feeling unsatisfied. Veterans of regiments to be relegated to the training base could be expected to be unhappy, but there were other complaints: too many airborne infantry colors or not enough; if a division retained one of its historic regiments, the loss of the others was mourned, and so forth.

Under the new scheme, 110 of the CARS colors are on the list of USARS reorganizations to be carried out by the end of fiscal 1988; more will undoubtedly be added in the future. Of these, 72 will be full-scale regiments, compared to 61 in the 1983 plans. The difference is mainly due to the addition of 11 cavalry colors, which were not treated in 1983 (with the exceptions of the 5th and 8th Cavalry, organized in the infantry and armor branches, respectively) because of the difficulty in

matching home and overseas squadrons.

Three of the planned full-scale cavalry regiments will be organized in the aviation branch, the 6th covering units in the III Corps (home) and V Corps (Europe) aviation brigades; the 9th designating air-ground cavalry reconnaissance squadrons in three of the light infantry divisions and the 9th Infantry Division (Motorized); and the 17th having battalions in the 2nd Infantry Division in South Korea, the 10th Mountain Division (Light Infantry), the 82nd and 101st Airborne Divisions and the XVIII Airborne Corps.

The 1st, 4th and 7th Cavalry colors will designate cavalry reconnaissance squadrons in armored and mechanized infantry divisions and brigades. The problem of home-overseas imbalance in the independent armored cavalry regiments (ACRs) will be solved by creating two hybrid USARS regiments, one pairing the 3rd ACR with the 11th in Europe, the other linking the 2nd ACR with squadrons of the 10th Cavalry in the 194th Armored Brigade at Ft. Knox, Ky. The 12th Cavalry will have only one squadron, assigned to the Armor School at Ft. Knox.

The formation of the light infantry divisions and corps aviation brigades, as well as modifications of the new designs for heavy divisions are among the force structure changes that have altered some of the original USARS linkage patterns. A total of 22 new combat arms battalions and five company-sized units are scheduled to be formed under USARS flags over the next three fiscal years, including three infantry battalions and two companies; 10 air defense artillery battalions; six field artillery battalions and three batteries; and three aviation battalions.

The new air defense units reflect the fielding of the Patriot missile system and the creation of formations for airfield defense in Europe and will necessitate use of the next three regimental colors on DA's (Department of the Army's) order-of-merit list—the 7th, 52nd and 43rd Air Defense Artillery—beyond the six originally envisioned (the 1st, 2nd, 3rd, 4th, 5th and 62nd). The 43rd Air Defense Artillery will continue to designate the home and overseas Patriot units (assuming the system is not transferred to the Air Force); the 3rd Air Defense Artillery, originally earmarked for this role, will designate divisional air defense battalions in heavy divisions.

The list of full-scale infantry "regiments" has seen a net reduction from 24 to 22. The 14th and 22nd Infantry have been picked up from just below the original DA "line" to designate linked battalions in the 10th Mountain Division and the 25th Infantry Division (Light) in Hawaii, together with the 87th Infantry (which will have one battalion in Panama), far down the original order of merit, but historically associated with the 10th Division. The colors of the 27th Infantry, historically affiliated with the 25th Division, will be picked up to designate two battalions there, and two in the 7th Infantry Division (Light) at Ft. Ord, Calif.

On the other hand, six infantry regiments originally slated for full-scale status—1st, 2nd, 4th, 5th, 23rd and 52nd—will now be represented only by one or two unlinked battalions. Changes in home-overseas linkage patterns mean that four infantry regiments already formed under USARS—the 9th, 23rd, 187th and 327th—will have to be reorganized.

The 9th, whose home base is in the 7th Infantry Division, was organized as a three-battalion regiment in April 1983, with the overseas battalion in South Korea; it is now to have six battalions—three in the 7th Division and three Alaska with the 6th Infantry Divisi (Light), to be formed there beginning t fiscal year. The 23rd will have only t battalions in the 9th Division, dropp the battalion now with the 2nd Divis in South Korea.

The 187th now has two battalion Panama with the 193rd Infantry Briga but when it is re-formed, the single ov seas battalion will be in South Ko (home base is at Ft. Campbell, Ky., w the 101st Airborne Division). The 32 Infantry was the first regiment to be ganized under USARS and now has th battalions in Alaska with the 172nd fantry Brigade, which will serve as base of the new 6th Division; under new plans, the three stateside battali of the 327th will remain at Ft. Camp with the 101st but with the single ov seas battalion in South Korea.

No decision has yet been made a when these four regiments will be r ganized, although a DA staff study r being reviewed recommends that it done during this fiscal year. A spo man for the regimental system offic the Army's Military Personnel Center he would like to see the date pus back, to give soldiers in those units months to a year to change affilia choices that may have been based on location of overseas battalions.

The nine infantry battalions of the Division have been removed from pattern of overseas linkages, so that division is now able to retain two o historic regimental flags—the 47th 60th Infantry—rather than losing all t (it will now drop only the 39th Infant The two unlinked infantry battalion the 2nd Division in South Korea wil the 1st of the 5th Infantry (to be red nated from the 31st Infantry) and the of the 20th Infantry (to be redesign from the 17th Infantry).

Other infantry regimental flags no the 1983 list but now earmarked fo tention are: 31st Infantry (4th Batta remaining with the Field Artillery Sc at Ft. Sill, Okla.); 51st Infantry (Cor nies E and F with the V and VII C in Europe, respectively); 29th Infa (1st Battalion remaining with the In try School, Ft. Benning, Ga.); and 509th Infantry (Company C in the 1 Airborne Division).

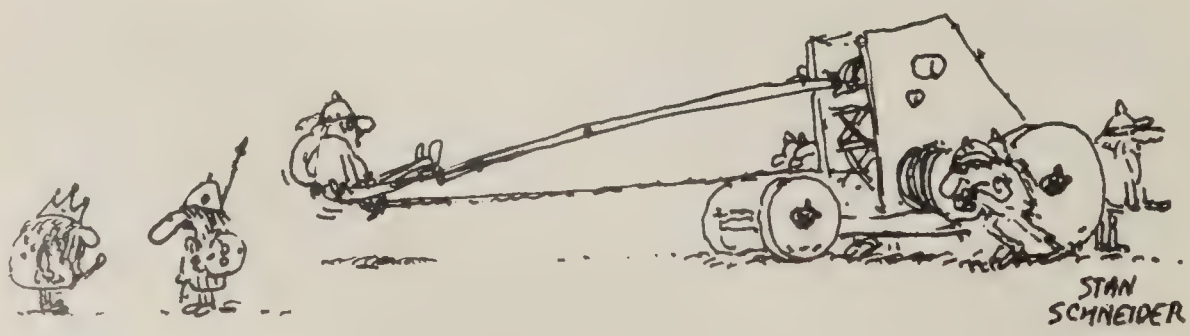
There are now 21 full-scale USARS artillery regiments due to be formed against 19 planned in 1983. Four of first six lineages that failed to make original DA cut—the 14th, 18th, and 27th Field Artillery—are now sc uled for full-scale organization, whil 6th and 13th Field Artillery from the inal list will be represented only by s stateside batteries each.

(Continued on Page 20)

This Month's Cover



Pfc. Cliff Langevin, of Stratford, N.H., is weighted down with combat gear during a break in the 94th Army Reserve Command's annual training this summer at Gagetown, New Brunswick, Canada. Nearly 4,000 reservists, mostly from the New England area, and an element from the 101st Airborne Division (Air Assault), deployed to the 500-square-mile Canadian training site to participate in Exercise Gagetown '85. A photo story on the exercise begins on Page 34. *(Photo by Stuart Rosner)*



"Morale's been zero since we ran out of rocks, your Lordship!"

Lt. Gen. Charles G. Dodge, 1907–1985

o Lt. Gen. Charles G. Dodge, U.S. . Army, retired, the high point of each his 11 years as executive vice-presi- ıt of AUSA was unquestionably the ociation's Annual Meeting in the fall. vas an exciting period for him, a time be in the thick of deciding association icy, listening to viewpoints from all ments of the Army family, making eches and renewing friendships made ing 36 years of military service.

When this year's meeting officially opened 14 October, delegates and guests were l that Gen. Dodge had died the day ore at Walter Reed Army Medical ıter. He was 78.

ı the minute of silence called to honor memory of this widely liked and ad- ed man, the many who had known must have had a variety of personal ressions to recall as they paused in ute. Perhaps some shared with ARMY e of the things that were said in "Front enter" when Gen. Dodge retired from AUSA leadership in 1977:

. Gen. Charles G. Dodge, U.S. Ar- retired, has a saying which must left lazy briefers wishing fervently they had spent more time on their ework in the days when he was on e duty.

aybe he said it differently then, but y it comes out, "You'll have to run by again—I'm just an old foxhole er," and the occasion is usually right a member of his staff at AUSA has ined an involved situation or pro- re.

then listens intently, takes detailed and asks frequent questions as his mant goes over the problem once .

spite his implication that he is over ead whenever he sticks it out of a le, it is unlikely that many people have heard this plea ever believed hey were dealing with anyone other an extraordinarily quick and per- e man.

ny doubts still persist, the briefer is a surprise if he ever gets the op- nity to see what Gen. Dodge can th those facts compiled so painstak- in staff conferences and through research. They have become parts lliant verbal reports in which he ad to defend a point of view, in- and informative letters to chap- nd detailed letters to members who aised questions about association .

e often than not, it would soon



become apparent to the person who had done the briefing that the boss not only knew his subject thoroughly but probably knew it better than the briefer.

Gen. Dodge occupied the executive vice-president's chair during what will always be considered one of the most challenging periods in the association's history. AUSA shared the Army's ups and downs during a tumultuous war and postwar era, bolstering where it could and speaking out—always speaking out—through good times and bad in its continuing campaign to make the country understand and appreciate its senior service.

Those who will one day write the history of the association may also record that it passed some of its most important milestones during this period, emerging from what could have been a permanently damaging time with new spirit, vigor, an increasingly stronger voice and the promise that the best years were yet ahead.

In the thick of the heat during this forging process was Gen. Dodge—tireless, enthusiastic, eloquent, prodding when the situation demanded it, and always with an unflagging faith in the association, the Army and the country.

But it is Charles G. Dodge, the man, that most of us who worked with him will remember. AUSA will probably never again have an executive vice-president who stands in the doorway of his office, puts his fingers in his mouth and gives an ear-splitting whistle to remind latecomers that a meeting is going on—or who has a wristwatch alarm that keeps going off at the damnedest times.

*He will be recalled as an expert trout fisherman and hunter whose colorful accounts of his annual deer-hunting exploits at Camp A. P. Hill made for delightful listening on cold afternoons in Washington. He is a raconteur of note—*he *would say of "war stories"—and it is a measure of his thoughtfulness for others that he was forever apologizing for telling them.*

If there is one word which probably best sums up Charles Dodge, the man, boss and friend, however, it is "class." That's a hard word to define and perhaps the most accurate thing that can be said about it is that you recognize it when you see it.

Perhaps one way of saying it is that to some of us who have been close to Gen. Dodge, his is the presence that comes to mind when someone mentions the famous motto of his alma mater, "Duty, Honor, Country."

Born in Maplewood, N.J., on 12 March, 1907, Charles Granville Dodge was commissioned a second lieutenant of cavalry upon graduation from the U.S. Military Academy in 1930. He then served in various capacities with cavalry and armored units and later was an instructor in mathematics and then horsemanship at West Point.

In 1944, he served in Europe as chief of staff of the 8th Armored Division and in 1945 became the chief of staff of the 2nd Armored Division. Subsequent assignments included deputy G-1 of the Third U.S. Army; deputy G-1, U.S. Constabulary during the postwar occupation of Germany; director of the U.S. Element, Allied Commission, Austria; and assistant deputy commissioner for Austria. From 1949 to 1950, he was chief of the Mediterranean-Middle East Branch, Operations Group, P&O Division, Department of the Army.

General Dodge graduated from the National War College in 1951, became executive secretary of the Weapons Evaluation Group in the Office of the Secretary of Defense, and in 1953 assumed command of Combat Command C, 2nd Armored Division in Baumholder, West Germany. He was promoted to brigadier general in 1955 and became deputy chief of staff for operations of the 7th U.S. Army. Later he was chief of the U.S. Army Advisory Group at the Air University; then deputy chief of legislative liaison,

(Continued on Page 20)


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"Meeting the challenge of the battlefield of the 1990s requires the LHX—a helicopter that will embody the most advanced engineering, manufacturing and systems technologies. Providing those technologies will require, in turn, the best talents and resources of the helicopter industry.

"We are very pleased that our Boeing Vertol and Sikorsky Aircraft divisions have selected each other to team in developing this next generation of helicopters.

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T. A. Wilson

T. A. Wilson, Chairman
The Boeing Company

Harry J. Gray

Harry J. Gray, Chairman
United Technologies Corporation

(Continued from Page 16)

Six field artillery regiments will designate only a single battalion each: the 2nd (with the Field Artillery School); 4th (with the VII Corps); 35th (VII Corps); 37th (in the 2nd Division in South Korea); 79th (with the 2nd Division); and 84th (with the 9th Division).

The 21st Field Artillery will have only two stateside batteries, while the 26th will be reserved to designate various target acquisition batteries. Another six field artillery lineages will be kept in the field Army with a single battery each: the 10th Field Artillery and the 16th, 40th, 76th, 92nd and 94th.

The USARS list for armor has remained relatively stable. Aside from some altered assignments within overseas theaters, the main change is that the 73rd Armor will continue to designate only the light armor battalion of the 82nd Airborne Division, rather than being reorganized as a multibattalion regiment; the colors of the 35th Armor will now be used for that purpose. The 2nd Division in South Korea will retain the 1st and 2nd Battalions, 72nd Armor, while the two tank battalions at the National Training Center, Ft. Irwin, Calif., will be redesignated in the 33rd and 63rd Armor. The single tank company in the Berlin Brigade will remain Company F, 40th Armor.

The 11 USARS regiments scheduled for organization in fiscal 1986 are: the 14th, 21st, 22nd, 41st and 504th Infantry; 62nd Air Defense Artillery; the 9th and 77th Field Artillery; the 3rd/11th Armored Cavalry; the 6th Cavalry (Aviation); and the 67th Armor. □

(Continued from Page 17)

U.S. Army. He became assistant commander of the 1st Cavalry Division in South Korea in 1960 and then its commander. Next he was assistant chief of staff for Reserve Components, U.S. Army, and in 1961 became the Army's chief of information. Gen. Dodge was named commanding general of the Fifth U.S. Army in 1963, a command he held until his retirement from the Army on 31 March, 1966.

Gen. Dodge is survived by his wife, Patricia; a daughter, Mrs. Sue D. Casner; a son, Charles Tyler Dodge; and grandchildren Ann Turner, Barclay and Ashley Dodge. His first wife, Elizabeth, died in 1983. Services were held at Ft. Myer, Va., on 17 October with interment at Arlington National Cemetery.

AUSA has announced establishment of the Lt. Gen. Charles G. Dodge Memorial Fund as part of the Landpower Education Fund. Checks should be made out to the Landpower Education Fund for the Lt. Gen. Charles G. Dodge Memorial Fund.

LJB□

Revisiting Some 20 Years Later

An American Soldier in Japan

By Malcolm Baldrige

My colonel didn't like me very much. At least that's what I was thinking as a 22-year-old forward observer one black, rainy midnight on Okinawa in 1945.

My 27th Infantry Division had taken heavy casualties and had been relieved by a fresh division of Marines. The trouble was, after 48 hours, the Marines had lost so many forward observers that they asked the Army for volunteers, and my colonel naturally volunteered me. That particular midnight, the four of us in my party had not much idea of where the Marines had ended up after two days of fighting. In my opinion, we were lost, but I didn't want to admit it. Trying to read a wet, dirty map by matchlight under a poncho in a downpour with the Japanese lines anywhere from 50 to 500 yards away gave me about as good a feeling as the 2½ times we'd been surrounded in the last month. I was almost wishing I'd buttered up the colonel a little more so he wouldn't always volunteer me first, when we stumbled into the Marine lines—I must say somewhat back of where we'd left them. One of my men said, "Lieutenant, you sure are lucky." At least that's a better confidence-builder on the front lines than saying you're not too dumb.

Well, yard by yard, we made it the rest of the way south to the end of the island with the 1st and 6th Marine Divisions and then rejoined the 27th up north, cleaning out guerrillas. When Okinawa was secure, we lived in real tents and sometimes had real movies while we were briefed on the coming invasion of Japan. My forward observer unit was to go in the second wave on a beach that looked about 100 yards deep before you reached a steep line of hills with perfect firing lanes down to where we'd land. Except for the replacements, all of us had made two or more landings and none of us thought we would live through this one.

I remember that feeling as if it were yesterday. Sure we'd do it, but for the first time without real hope. I guess "resigned" was the right word, particularly for the older soldiers who had made landings on Makin, Eniwetok, Saipan, Tsugen Shima and Okinawa and had not seen the United States for 3½ years.

Then the bomb dropped, and shortly after, the surrender came. I really can't accurately describe our feelings—not instant joy, certainly, more of a wariness, a fear to believe because normal human sensibilities had been repressed for so long, while the instincts for combat self-preservation had been honed. T had to be. On the front lines, it's kil be killed, and you have to be passabl it if you are going to last more tha night or two.

And the longer you last, if you're ing to beat the odds, the more you brutalized. Question: Otherwise how c you give the order to fire on a bunc Okinawan women looking for their near your lines on a quiet night ligh by a full moon? Answer: Because suspected they were Japanese sold dressed in women's robes. Question: you try to warn them off to see whe they were women and would leave? swer: No. Thought about it, but a w ing would have given away our locat Question: Shouldn't you have been before firing? Answer: Being sure can you killed—and they did turn out t Japanese soldiers, every one. In sh the right reaction, but it came too qu ly and too easily. I couldn't help won ing what we were turning into.

The first week of the occupation, ments of the 1st Cavalry, the 11th borne and the 27th Infantry Division to Japan, ending up, in the case of battalion, in Aizu-Wakamatsu, a sn bound agricultural town in north Honshu. The few hundred of us headq tered there were responsible for chec the disarming of several villages sp over more than 100 square miles. had some apprehension—there were a good many Japanese divisions in country, and we had to hope they following the emperor's orders to down all arms. We also didn't trust th and some of our GIs and officers tho this could be a trap. I thought that p ble, but not probable; still, we slep over a week with M1s and carbine our side.

I was the liaison officer between battalion and the local authorities, in dealing with the Japanese, came t them in a different light. In my opin they were terrified—first, at the enorm ness of the defeat when they had continually assured of victory; sec out of fear that the American sol would rape the women and pillage town. The propaganda posters had all been taken down. They showed results of a four-year campaign to d GIs as rapists and robbers with long and mustaches. The fact that I had a nose and a handlebar mustache ma difficult for them to believe my a ances that none of that would hap

d that there would be serious trouble
ly if all arms were not turned in.
It was not easy for me to be as san-
ine privately about our conduct. I had
en in the Pacific short of two years
en, but a great many of my troops had
en overseas for 3½ years. Although
e of the emotions that keeps combat
ops going for so long is loyalty to
ir fellow soldiers, the reverse side is a
wing hatred for the enemy. I worried
out this.
t took about 48 hours for both sides
get things figured out. The Americans
v a town populated mostly by older
ple, women and children who were
viously frightened. So they forthwith
ceeded to act as GIs did everywhere
h civilians. The Japanese saw front-
veterans of Saipan and Okinawa giv-
candy to kids and exchanging food
goods, not stealing them. There just
n't any trouble. That may sound corny,
it was true.
he Hotel Mukaitaki, where the offi-
were billeted in Aizu-Wakamatsu,
a true "ryokan"—an old country inn
several hot baths and an ice-cold
to finish up, fed from a mountain
am running through the base of the
l. Mama-San owned it and ran it—
I mean ran it. She was in her forties
n I knew her first, had lost a hus-
d in the war, had some kids to raise,
was fighting a losing battle to keep
hotel going for reasons of pride and
ition, as well as income. Once she
red out we weren't going to steal the
ques or wreck the hotel with wild
ies, I am sure she looked on the oc-
ition as a way to keep the family fed
her patrimony together. All the offi-
slept on the floor, Japanese style,
paper walls and an icy breeze waft-
hrough the bathrooms.
e was a strong woman, and most of
our early twenties could imagine
own families trying to make out in
ar circumstances. As liaison officer,
lt with her often and seldom did we
ree. I remember her fondly.
me 20 years later, the business I was
ng had a Japanese partner in one of
visions whom I had to see in Tokyo.
ded to take along my wife and two
ters, ages ten and eight, during their
tmas vacation and arranged to spend
tmas at the Makaitaki as Mama-San
till running it. She didn't compre-
that I was going to Tokyo on busi-
and let everyone in town know I
oming across the ocean with family
it her for Christmas. I knew this
matter of great face to her, but
we got off the train I was still sur-
to see a band, the mayor, the
il, and in front of all—Mama-San
best kimono.
st unusually for a Japanese, she started to cry in public. This brought some tears to my eyes, and then both daughters started crying, and my wife joined in. We got over that; I made a short speech to the council, the mayor did the same for me and off we went to show our girls a real Japanese country inn with paper walls, straw mats and futons to sleep on, very hot baths, very cold bathrooms and no television. Mama-San fixed Christmas dinner and, at age 70, danced a formal Japanese dance for us to a 40-year-old record played on an honest-to-God 1920s gramophone with the barking dog trademark. She's dead now, but, as the kids would say, she was a piece of work and neither I nor our family will forget her.

The 27th Division went home that winter of 1946, but I still had about six months more to serve in Japan. I spent one month with a newly arrived division giving combat classes for reasons unknown to me as everything was very peaceful.

Tokyo had been almost flattened by fire and bombs, although by order the emperor's palace and grounds had been left unscathed. I was shocked, coming, as I had, from the relatively untouched countryside. Even with Allied help, medical care, housing and food were monumental problems.

My assignment was with the Headquarters Group of Gen. Douglas MacArthur's headquarters. My group was not very glamorous—it did the administrative and paper work for the housing, food and transportation needed for the rest of the Headquarters—who in turn did all the major planning and rule-making for the occupation.

On the way back to the States when it was over, I had plenty of time to think about the occupation and the future. You could see by the summer of 1946 that the Japanese were going to make it back to prosperity by working for it. Gen. MacArthur had been given authority to set up a new economic system there, and he and his staff did. The *Zaibatsu* were broken up, but it was obvious the former industrial leaders would coalesce again in different forms as they have.

The American plans allowed for concentration of industry, protection and subsidies for emerging industries, government financing, aid and a host of other programs that were necessary at the time for a war-ravaged country but now are part of Japan's closed-market syndrome. All of its leaders have been raised under this system, with its modern variations of "Buy Japan." This makes it very difficult for them to change—and sometimes even to understand the criticism.

With some real help, they have performed an industrial miracle. Now is the time for the Japanese to stop looking inward and face the outward responsibilities they have as the world's second largest industrial power—whether it be to their industrialized or their Third World trading partners. They are capable of it.

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MALCOLM BALDRIGE has served as secretary of commerce since January 1981. A native of Omaha, Neb., he graduated from Yale University in 1944. From 1944 to 1946, he was with the 27th Infantry Division in the Pacific and on occupation duty in Japan, coming out of the service as a captain.

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Patriot launches a new era in Europ

Ready to take on large numbers of aircraft at all altitudes and in any weather, the Patriot air defense system is now being deployed in Europe. Developed by Raytheon for the U.S. Army's Missile Command, it is 20 to 30 times more effective than Nike-Hercules and will give the Army a significant increase in firepower. Patriot is also being adopted by other NATO forces and Japan.

The system's capabilities have been demonstrated in the comprehensive tests shown above. Army troops scored a perfect four hits out of four against high-speed target aircraft in an electronic countermeasure environment.

Patriot achieves this level of performance with less equipment and manpower than any current s tem. It utilizes a single phased ar radar for target acquisition, track and missile guidance. Older syste have a separate radar for each job Patriot requires fewer troops to m it and half as many repair line ite as its predecessors. In fact, most maintenance can be done in the field.

There's another reason why Patriot is so outstanding. From i tial development through field d ployment, the Army and Raythe have followed sound fundament



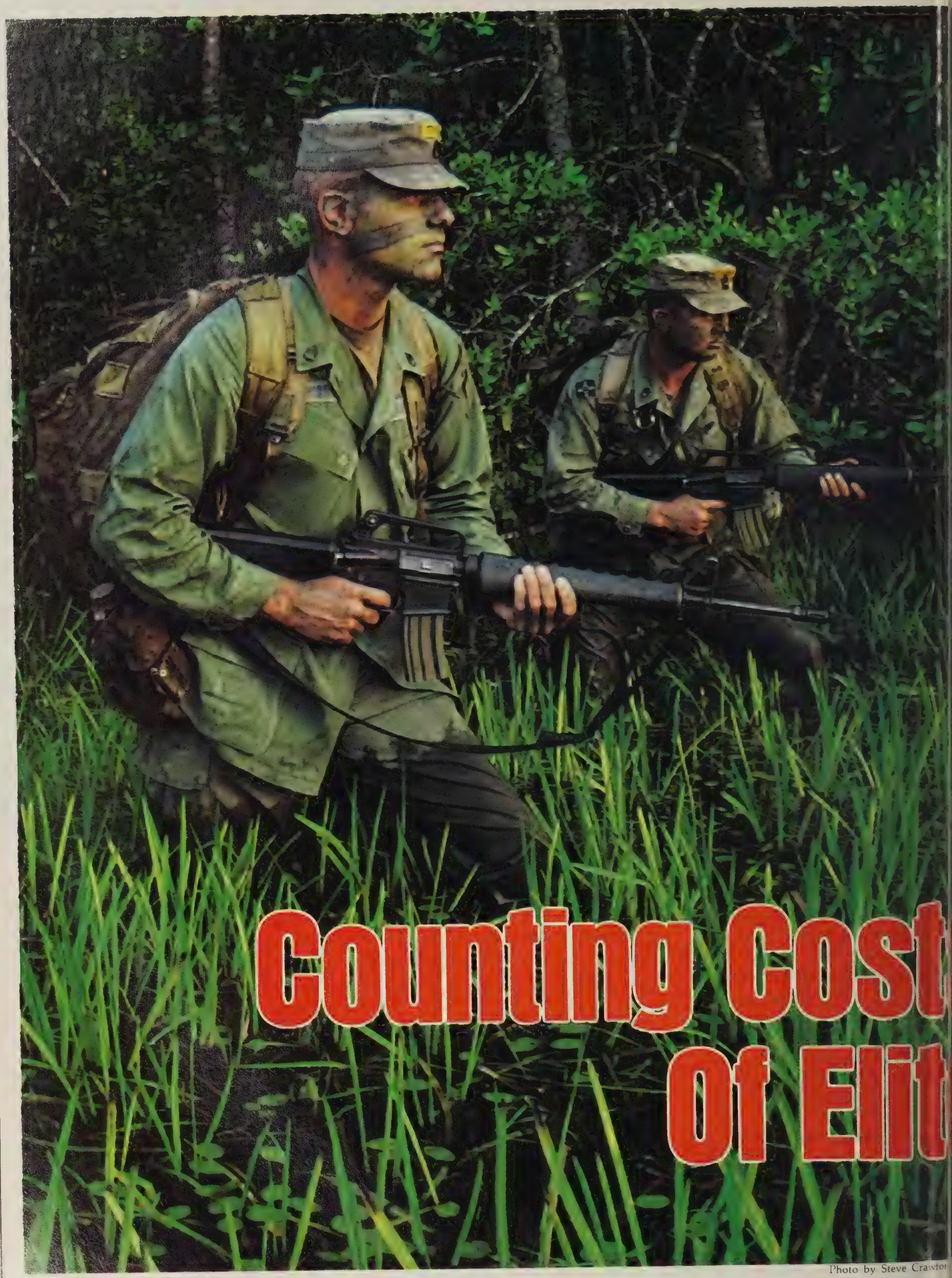
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Counting Cost
Of Elit

Photo by Steve Crawfor

ince the successful execution of operation "Urgent Fury" in Grenada in 1983, there has been renewed interwithin the U.S. Army in elite forces. The daring airborne assault and airbile raids of the 1st and 2nd Battals, 75th Infantry (Ranger), as well as prominent role of the paratroopers of 82nd Airborne Division, produced a n level of favorable publicity for Amers specialty forces, a level which had existed since the early years of Presit John F. Kennedy, when he spond the Green Berets.

his heightened interest has manifesttself in several ways. First, the deci to establish a third Ranger battalion a Ranger regiment can be related dily to the Ranger exploits in Grenada. ond, there is no question that the ef to create light divisions in the U.S. y has benefited from the success of forces in Grenada.

hile these new divisions have not designated as elite divisions, even ficially, there have been numerous ssions concerning how the light dins can be given an elite character. In midst of this revitalized interest in forces, it is important to look again e concept of elitism to confirm its nued relevance.

e elite forces considered here fall he special mission/special operations category; that is, those forces formed with a specific purpose in mind. Examples include Commandos, Rangers, paratroopers, mountain troops, Special Forces, raiders and like organizations. These special operations/missions generally require a special skill (raiding, parachuting) or the capability to operate in special terrain (mountain, amphibious, rear area operations).

Elite forces have a number of characteristics in common. These characteristics may vary somewhat from nation to nation and may also depend on whether the nation is at war or peace. Generally speaking, however, they include the following: lightly equipped; staffed by volunteers; distinctive uniforms or insignia; relatively free of ordinary administration; special access to resources for training or combat; highly mobile; hit-and-run raider role; high physical and mental standards; rapidly formed synthetic traditions; entrance by "rite of passage"; usually receive a high level of media coverage; disdain for outsiders; small unit or individual actions; serve a political purpose; better quality of soldiers and leaders; superior tactical performance; hazardous, unusual missions; and portable infantry weapons.

Elite forces have been formed most often for two reasons. First, and probably most important, they have been formed

The need for select troops is undeniable and their contribution to U.S. military successes is distinguished, but they must be maintained with the realization that their use can be expensive, not only in terms of funds spent.

By Lt. Col. Gary L. Bounds and Maj. Scott R. McMichael

orces

in response to a threatening military situation. Thus, fighting alone from her insular position for survival, Great Britain created the Commandos in 1940 as a raiding force to obtain intelligence and to maintain the psychological edge of striking the enemy offensively. Similarly, American Rangers were formed to participate in the Commando raids to gain military experience for U.S. forces.

The Special Forces in the early 1950s were formed primarily from East European cadres and were trained to organize and lead "stay-behind" partisan forces in case Western Europe was occupied by overwhelming Soviet forces. However, as the threat changed to that of communist insurgencies in the Third World, the Green Berets reoriented to conduct counterinsurgency warfare. In this sense, elite units have also functioned as popular symbols around which national and military pride could be fostered.

The threat of terrorism has also produced its own brand of elite units. Most European democracies now maintain elite antiterrorist units like the West German *Grenzschützgruppe* 9. Indeed, the two U.S. Ranger battalions owe their resurrection in 1974 in large part to the terrorist threat.

Second, modern elites have also been created to provide innovative tactical solutions to vexing problems on the battlefield. Infiltrating German storm troopers (*stosstruppen*) using novel tactics solved the problem of penetrating the seemingly impenetrable trenchlines of World War I and returned maneuver to the battlefield. Similarly, German elite airborne troopers added the vertical dimension to ground war and proved that stiff defenses (the Maginot Line) could be taken from the rear.

The Green Berets can also be viewed from this perspective, representing one tactical response to the new problems posed by guerrilla war. Once these new elites proved their utility, other nations quickly organized their own counterparts. By the end of World War II, all the major combatants fielded airborne units and most had Commando-style raiders.

Elite military units are suited for operations which might confound an ordinary unit. For deep, surgical raids and hostage rescue, no American infantry battalion can approach the expertise of a Ranger battalion. By virtue of its training and organization, the 82nd Airborne Division is the only division in the Regular Army capable of conducting a mass airborne assault. No conventional Allied infantry unit could match the elite German mountain divisions of World War II in mountain warfare.

At the risk of stating the obvious, it is necessary to note that this specialist function is both the *raison d'etre* and the primary military utility of elite units. Historically, elites have performed their specialized functions extremely well.

In addition, elite units have often fought long and well in conventional roles when so directed. In the "laboratory role" they have been used to test new doctrine, new weapon systems and new organizational schemes. Elite units may also nurture future leaders, as exemplified by the rise to prominence after World War II of America's top airborne commanders—Lt. Gen. James M. Gavin, Gen. Maxwell D. Taylor and Gen. Matthew B. Ridgway.

On the political level, elite units can act as popular symbols of a nation's military strength and international pre
For example, for years the French "pa
have symbolized France's enduring in
tion to maintain an international capa
ity. Elite forces may also be used for
ternational signaling simply by virtu
an increase in their readiness status

Finally, elite units can operate on
blurred edge of war and peace in ant
rorist, rescue or interventionary role
defuse crises before they force large-s



Photo by Steve Craw

Britain's World War II Commandos were born of a psychological need to strike bac from a desperately isolated military position: Commandos landing on the Anzio beac head their with cargo bicycles in February of 1944.

combat. The Grenada operation is a
example of the latter.

The 1980 Iranian rescue operatior
the other hand, represents the failu
elite units to accomplish a very spe
ized political-military operation w
could have signified American res
expertise and striking power. Instead
its failure it signified the opposite.

Although elite units have proven
ity, their costs are frequently overloc
One of the most obvious costs is th
leadership drain.

Elite units can rob their parent or
zations of quality personnel. Many
vates in elite units could have been
geants or lieutenants in conventional
British military commanders often
plained in World War II that Comm
levies on their units for volunteers stri
away their best soldiers. The U.S.
cial Forces are another good exampl
that the typical A Team, by necessi
composed of 12 men at the rank of
geant and above.

Strong resentment often exists bet
elite and conventional forces. Elite

LT. COL. GARY L. BOUNDS is an infantry officer who has served in the Middle East, South Korea and Vietnam. He is currently assigned to the Office of the Deputy Chief of Staff for Operations and Plans as a staff officer. MAJ. SCOTT R. McMICHAEL is an artillery officer assigned as a research fellow, Combat Studies Institute, U.S. Army Command and General Staff College. He has served in Alaska, Ft. Bragg, N.C., and most recently in West Germany.

equently monopolize the publicity given military operations, to the detriment the conventional units that may, in ct, be making much greater contribu- ons. This unbalanced publicity also adds the superior attitude assumed by elite its, an attitude usually expressed quick- to their "inferior" cousins. This *prima nna* quality of elite units is fiercely re- ited by regular soldiers of all ranks. Another source of resentment is the gher priority given to elite units (in ace and war) regarding access to re- irces, both materiel and personnel. te units traditionally maintain more sonnel than conventional units and en- almost unrestricted training resources. yone who doubts this statement should npare the training ammunition alloca- n of the 1st Battalion, 75th Infantry nger) to that of the entire 24th Infan- Division at Ft. Stewart, Ga.

here also exists a bureaucratic hostil- The entire system of promotions, orations, honors and other adminis- ive actions often seems to favor elite r conventional units. Both Gen. Omar Bradley and Field Marshal Bernard L. ntgomery were known to have com- ned about elite units in World War n part for the reasons cited above.



A Special Forces trooper uses scuba gear to negotiate a swamp during a field exercise.

The successful 1983 Grenada operation boosted the renewed interest in light forces: Below, *82nd Airborne paratroopers move inland from their landing zone on the island.*





Photo by Steve Craw

Special forces men from Ft. Bragg, N.C., patrol a swamp during training in the Uwharrie National Forest.

Another well-documented cost of elite units is their high casualty rates. Given their offensive *élan* and hazardous missions, that high rate is only natural. The decimation of German airborne units in the 1941 assault on Crete (even though it was successful) so alarmed Adolf Hitler that he refused to mount another large-scale airborne operation during the entire war.

The U.S. 10th Mountain Division is another example of this cost. Many military history buffs know that the 10th Mountain Division achieved a deserved reputation as a superb unit in Italy in World War II, even drawing the praise of the German theater commander, Field Marshal Albert von Kesselring.

Few, however, are aware that the division suffered a casualty rate several times as great as that of the average division in the Italian campaign. Many of these casualties were irreplaceable because the division comprised a high percentage of college graduates and athletes who had trained and lived together for two years.

Clearly, high casualty rates in elite units exacerbate the aforementioned leadership drain. In wartime, it becomes more and more difficult to replace the cadres and high-quality individual soldiers of elite units. There comes a time when the conventional army can no longer afford to send its best men to elite units. Ultimately, high casualties may cause elite units to be disbanded or reorganized.

Even though military elite forces often are an army's most effective fighting force, they must be used judiciously to avoid squandering the precious manpower and training resources that they represent. However, many commanders have found it difficult to resist the temptation to employ elite forces in conventional roles simply because they are available in theater. In fact, the longer that elite forces remain in theater, the more likely it is that they will be used for missions other than those for which they initially were designed.

History provides no shortage of examples. The costly use of Israeli paratroopers at Mitla Pass in 1956, the use of U.S. Ranger companies in the Korean War, and the use of Green Berets as raiders in the Vietnam war are but three examples among many. In some cases, misuse of elite forces quickly led them to become ineffective in combat because of the high casualties incurred.

Once an elite force is established and recognized, it often tends to grow to an unnecessary size. Such growth irrevocably leads to the nonuse or misuse of these costly forces. The growth of U.S. Ranger units in World War II and the Special Forces during the Vietnam years, as well as the retention of excessive airborne forces in the 1950s, are all good historical examples of this cost.

Proliferation also increases the pressure on wartime commanders to misuse elite forces because no other units may be readily available. Many Allied commanders in World War II deplored the idea that airborne divisions must be held in reserve and not used except for bona fide airborne operations. Ultimately, the



During World War II, specialist ski and mountain troops were trained at Camp Hale, Colo.

clamor against this idea and the world-wide shortage of infantrymen forced airborne divisions into the line as regular and/or motorized infantry.

One other cost of elite forces bears mentioning. Because elite units often have independent chains of command, frequently with high-level connections, problems in command and control may be incurred by their introduction into a theater.

The employment of the Canadian-American 1st Special Service Force was complicated more than once by the fact that the Canadians had direct links to their own national command. Maj. Gen. Orde Wingate, founder of the long-range patrol groups in Burma collectively known as the Chindits, bedeviled his superiors by his independent communications to Prime Minister Winston Churchill. Vietnam commanders may also recall the command and control difficulties which they experienced when Green Beret units operated in their sectors. Simple coordination, much less control, was sometimes impossible.

The following vignettes reveal some of the benefits and costs of elite forces in wartime. Information on World War II



Having landed by parachute, a soldier of the Canadian-American 1st Special Service Force prepares to move out on skis during training at Ft. William Henry Harrison, Mont., 1943. This unit fought magnificently in Italy, but its international character led to command and control problems.



Rangers is based on Michael J. King's forthcoming study, *Rangers: Selected Combat Operations in World War II*, to be published by the Combat Studies Institute, U.S. Army Command and General Staff College.

From December 1941 through November 1942, the United States experienced a period of frustration from not being able to respond to the German threat with large-scale operations. As a result, the first Ranger companies were formed in England by Maj. Gen. Lucian K. Truscott Jr. This action was approved by U.S. Army Chief of Staff Gen. George C. Marshall. The units formed, trained with the British and participated in a limited role in the Dieppe raid.

After a number of successful limited operations in the Mediterranean theater, they were used as a spearhead force at Cisterna during the Anzio beachhead expansion. In this conventional role, all but six members of a 767-man force were killed or captured. The remaining numbers were either transferred to the 1st Special Service Force or sent home to train new units.

Despite these catastrophic losses, other Ranger companies were formed and continued to fight in both the European and Pacific theaters. Rangers secured key ter-


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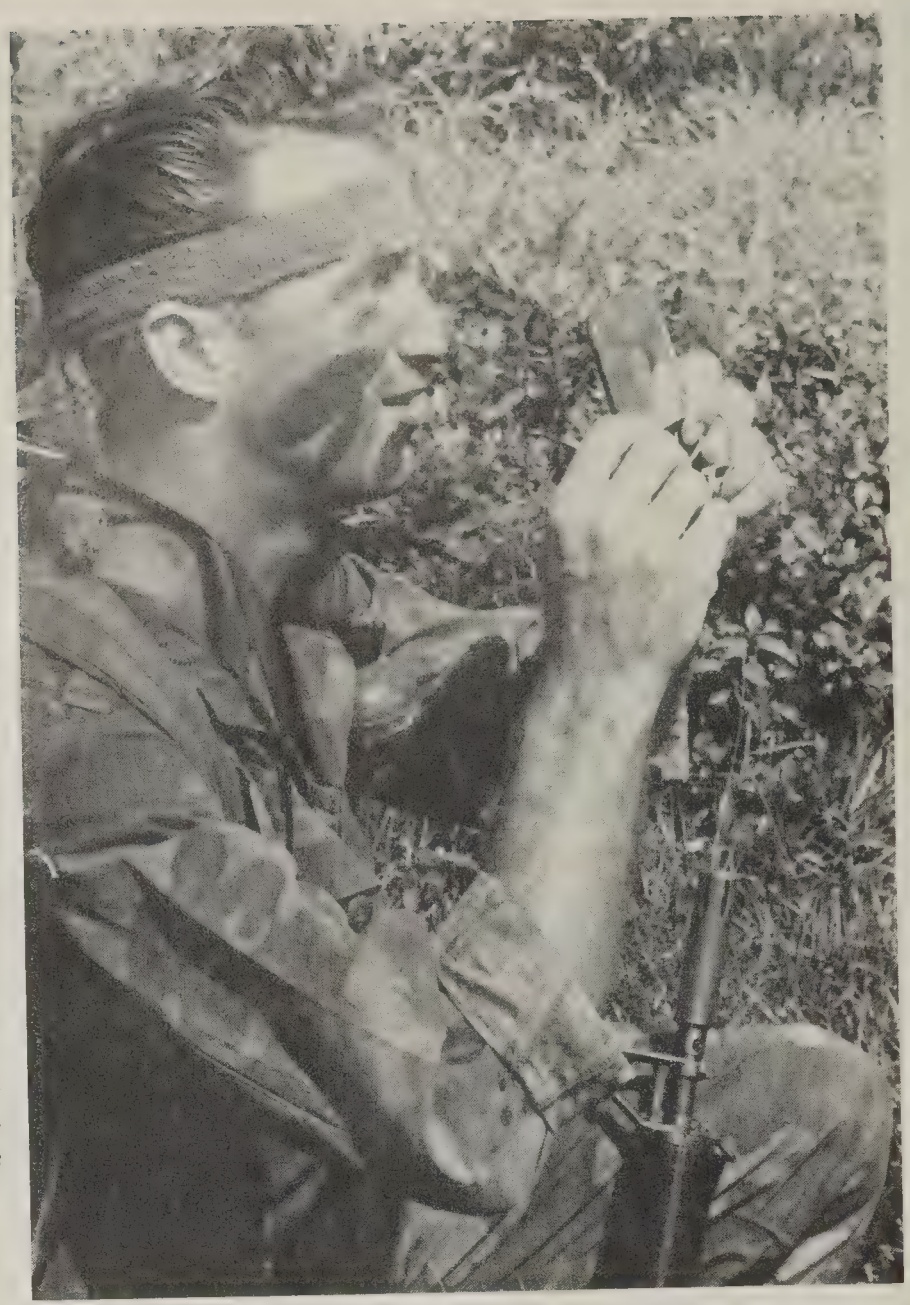
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S.Sgt. James Moran, a Ranger with the 101st Airborne Division's Company L, 75th Infantry, uses a mirror to signal a helicopter during Vietnam field operations, July 1970. The 75th Infantry, which designates today's Ranger units, was reactivated in 1969 to cover divisional long-range reconnaissance units in Vietnam.

rain during the Normandy invasion and conducted raid-and-rescue operations in the Philippines. Invariably, the longer the Ranger battalions remained in theater, the heavier they became, acquiring, for example, organic 4.2-inch mortar and howitzer support.

The 10th Mountain Division is another example of the dramatic benefits and costs of elite forces. Originally created as the 10th Light (Mountain) Infantry Division, the 10th Mountain Division eventually acquired a force structure which had almost the same strength as a standard U.S. infantry division but which included a stronger combat service support base, two times as many automatic rifles and an improved direct-fire capability. Composed of elite troopers, most of whom had college educations and athletic outdoors backgrounds of skiing and/or mountaineering, the Division trained stateside for two years before its deployment to Italy.

In Italy, the 10th Mountain Division quickly established its reputation as a cohesive, innovative, proficient fighting organization, impressing the Germans with its speed, tenacity, mobility and tactical expertise.

Nonetheless, the casualties it suffered far exceeded those of the average division and would have led to its eventual disbandment since no similarly trained replacements were available. However, the war ended before this happened.

Clearly, the maintenance and employment of elite units involve costs which are not readily apparent to the casual observer. Particularly in wartime, leadership drain, intraservice resentment, high casualty rates, misuse and nonuse of valuable combat power, unnecessary expansion, and command and control difficulties pose the very real question of whether the achievements of elite forces balance their costs. It is important to remember in this connection that the general officer boards held by the European theater at the end of World War II recommended that, except for airborne units, no specialized divisions be maintained in the overall forces.

In peacetime, the issues are less troublesome but also less clear. This is primarily because the military utility of elite forces must be measured in potential rather than in concrete accomplishments. Subjective considerations are also significant. The contributions of elite forces to nati pride and service esprit, their influe as a popular symbol and their exist as an international signal of Americ resolve and expertise all have high val

Ultimately, the central question is h large elite forces should be. With the verely constrained end strength of U.S. Army, our leaders certainly sho consider the number of units which be trained and resourced as elite for Adding a battalion of Rangers, for stance, is probably as expensive fro resource point of view as adding an tire infantry brigade.

The costs of giving our new light d sions an elite character must also be m sured. These include additional school for junior leaders, increased hiring of vilians to support the units and t posts, new construction needed to bi and train the force, stiffer recruiting (e in lean times), weeding out and reassi ing soldiers who do not measure up. Th and other costs must be measured clo to determine, first, if they can be bo within the context of the overall fo and second, if the final tally produ the proper balance.

Even the staunchest critics of elite fo do not advocate their total disbandm for if such forces are not maintained, specialized force may be available in ti of crisis. However, elite forces shoul restricted in size to prevent their use conventional infantry. Few elite missi require forces larger than a battalion their accomplishment. Finally, any incr in the size or number of elite forces sh be made with a firm grasp on the less of the past and a recognition that costs of raising and maintaining elite fo often outweigh the battlefield benefi

This Is the Army?

I recently asked my preschool st dents why their daddies like t Army for a career. Below are so of the responses:

Eric: "My daddy likes the Arm because he likes to work."

Ben: "My daddy likes to do pap until 5:00 in the afternoon."

Heather: "Daddy likes to use uniform. But I don't know who thinks he's foolin'. He still looks li my daddy in it."

SHERRY KUGHN

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Reservists Train in Canada

Two Weeks in Bear Country

Text by Philip J. Fick
Assistant Editor

Photos by Stuart Rosner

The Massachusetts Army reservist pulled his jeep to a halt along the roadside. Lifting his helmet, he removed his goggles and a bandanna from his nose and mouth. As the dust settled to the ground about him, he took in a deep breath of fresh air and wiped his brow. He peered at the treeline to his right: no sign of bears.

The soldiers had been warned to keep a watchful eye out for bears and moose, but it was still hard for some of them to believe they were in Canada. Truck-sized clouds of dust were ever present as they drove the miles and miles of unmarked dirt roads. The month was August and the afternoon temperature, warmed b bright clear sun, hovered around 70 grees.

Dust and bears notwithstanding, it peared that the 94th Army Reserve Co mand (ARCOM), headquartered at H scom Air Force Base, Mass., had fou the ideal training site for its troops, a spending two weeks this summer at 500-square-mile military training cen at Gagetown, New Brunswick.

Located less than 240 miles east of Maine border on the Atlantic seaboa the site at Gagetown offers just what Reservists in the northeastern states h long sought—a vast open area within



Far left, astride their M60A1 tank, members of D Troop, 5th Cavalry, 187th Infantry Brigade, roll home in a cloud of dust at Gagetown, New Brunswick, Canada, where the 94th Army Reserve Command, headquartered at Hanscom Air Force Base, Mass., held its annual training this summer. Left, a soldier from the 187th Infantry Brigade in MOPP (mission-oriented protective posture) gear during Exercise Gagetown '85.



Army reservists from the 3rd Battalion, 35th Infantry, 187th Infantry Brigade, prepare their M60 machine gun for blank-round firing at the Gagetown, New Brunswick, training site.



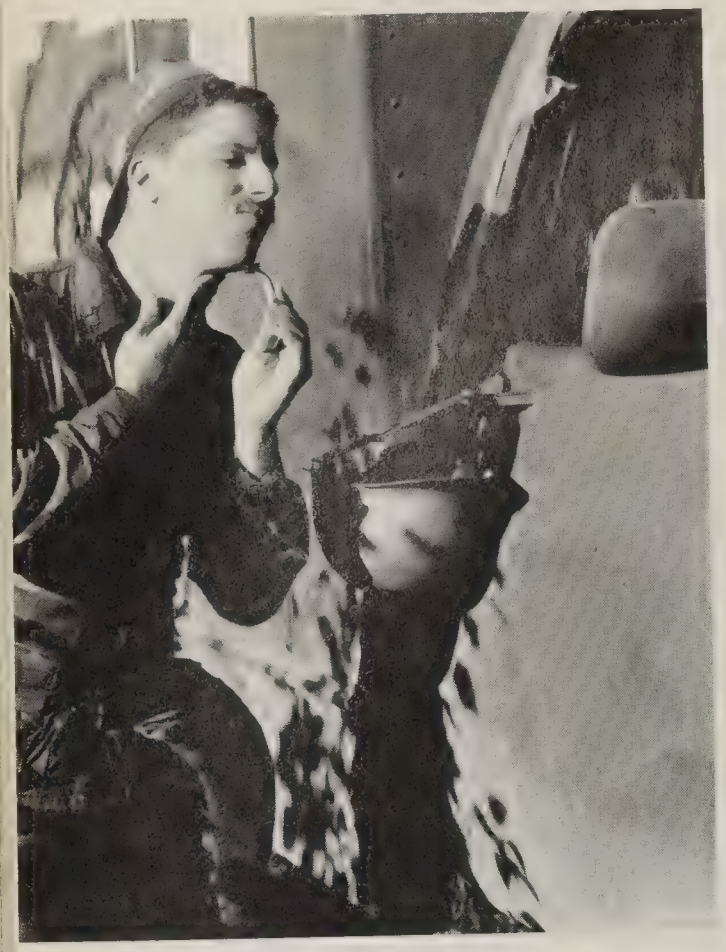
Left, a ½-ton truck raises a trail of dust on one of the many dirt roads at Gagetown.

region where they can conduct a full range of training on a self-sustaining basis.

In the past, the 94th ARCOM's main tactical unit, the 187th Infantry Brigade, with its 167th Support Group providing backup, has held its annual training at Ft. Devens or Camp Edwards, Mass., or Ft. Drum, N.Y., sites which have the traditional support facilities and considerably less space for training exercises. The largest of the three, Ft. Drum, has about a third the acreage of the Gagetown site.

The Canadian training site has been used by the Maine Army National Guard in recent years, but this summer's Exer-

Right, a member of the 3rd Battalion, 18th Infantry, 187th Infantry Brigade, lines up the sight on his 4.2-inch mortar during training this summer at Gagetown.





Left, a soldier uses an upturned helmet and a truck's mirror to shave himself during a break in training at Gagetown.



Col. Thomas C. Stones, commander of the 187th Infantry Brigade, was the task force commander for Exercise Gagetown '85.

S.Sgt. Jerry Rivers of Haverhill, Mass., plots mortar fire coordinates over a board set up in the field as other members of the Army Reserve's 187th Infantry Brigade stand by during summer training exercises at Gagetown, New Brunswick.

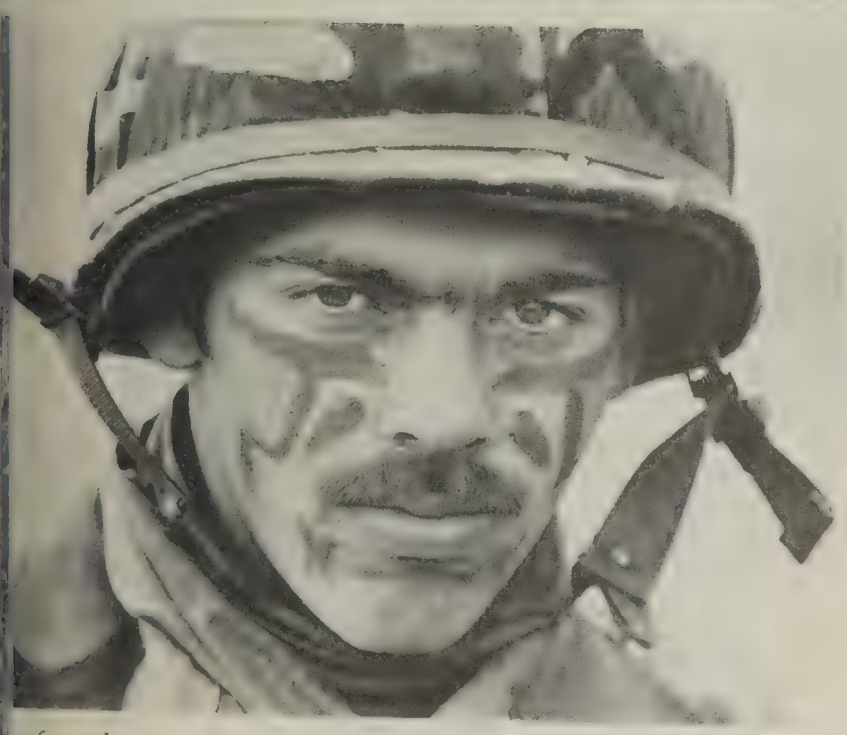


cise Gagetown '85, with nearly 4,000 troops participating, represented the largest U.S. contingent to ever use the site and one of the largest to ever train in Canada. Participating in the exercise were: the 94th ARCOM's 187th Infantry Brigade from Ft. Devens, one of only three separate infantry brigades in the Army Reserve force structure, and the 167th Support Group from Manchester, N.H.; a partial battalion from the 101st Airborne Division (Air Assault), Ft. Campbell, Ky., which acted as evaluators and provided other training assistance; and augmentation elements from other E Coast ARCOMs representing—in ac tion to the 94th's Massachusetts, Mai New Hampshire and Vermont reserv —New York, Pennsylvania, West Virg ia and Florida.

The purpose of Exercise Gagetown



A soldier heads for the door of a UH–1H helicopter on a plain at Gagetown.



Left, soldier wearing war paint during Exercise Gagetown '85.

s for the reservists to conduct their mal annual training activities, includ- platoon-level Army Training and Eval- ion Program (ARTEP) exercises and ning with crew-served weapons such the M60 tanks, artillery pieces and tars, while relying as fully as possi- on the support of the 167th Support up for its many field needs.

heduled for the two weeks from 10 4 August, the exercise was actually e than two years in the planning. Ca- an and Maine Army National Guard ials were consulted in detail. Several s before the main contingent rolled ss the border, construction and pre- ioning of ammunition and food stor- sites were performed. Advance parties ngineers were sent in to locate and establish water access points to be used later for showers and laundry as well as for drinking water.

As is true with most larger exercises, getting there was one of the main challenges. The troops from the 101st Airborne Division flew into the nearby port city of St. John on C–141s, but the reservists traveled in convoys totaling nearly 1,000 vehicles.

Many of the soldiers were on the road for two days as they drove from points south and west up through New Hampshire and Maine and on the last leg of the journey across western New Brunswick.

The staging area for the border crossing was at the airport of Houlton, Me., in the state's northernmost county of Aroostook. At the border, Canadian guard dogs sniffed the vehicles for drugs. Border patrol officials stopped many of the vehicles and questioned the occupants:

"What is your destination?"

"How many cartons of cigarettes are you carrying?"

Of all the vehicles in the convoy, only ten had to be towed into Gagetown. Gen. Robert W. Sennewald, commanding general of U.S. Army Forces Command, an observer for the exercise, described that as an accomplishment the active component would be hard pressed to duplicate.

In addition to the trucks, jeeps, buses and troops deployed to Gagetown, the aircraft—UH-1H Hueys and OH-58 observation helicopters—were flown in from Hanscom Air Force Base and Ft. Campbell. Heavy equipment such as the M60s, M113-series armored personnel carriers and earth graders were shipped by rail to the training site.

The task force commander for the exercise was Col. Thomas C. Stones, the commander of the 187th Infantry Brigade. While his troops busied themselves setting up camp, members of the 167th Support Group prepared and manned water access points, ammunition sites, field kitchens, parts and maintenance points, field PXs and an inflatable MUST (medical unit self-contained transportable) hospital.

The next several days were filled with traditional soldierly duties as the initial charm of the Canadian countryside wore off and the troops got down to their training in earnest: platoon and squad tactics, chemical training in full MOPP (mission-oriented protective posture) gear, medical evacuations, range firing with the M16 rifle, M60 tanks and everything in between, mechanized deployments, movement of the tactical operations center and of course the PT (physical training) test. All were included in the soldier's day.

With no cantonment to fall back on for vehicle maintenance or medical care, the 167th was given a realistic wartime mission testing. In the interest of maintaining self-sufficiency throughout the exercise, the motto was "bring it with you or do without."

Apparently that motto worked and Canada was not without its rewards. The 94th ARCOM tentatively plans a return trip to Gagetown in 1987.

Computers on

By Capt. Joel A. Buck
and
Col. Richard J. DeBastiani
U.S. Army, retired

Computers increase the combat power of a force by processing information faster and more accurately. Today's commanders are on the verge of being able to decisively commit and direct forces using computerized command and control systems, yet the Army must be cautious in its automation endeavors. Current computers are vulnerable to electromagnetic pulse (EMP) and chemicals. Thus, Army reliance on these computers must be tempered while initiatives that make computers more survivable on the battlefield are developed and implemented.

An expert estimated in 1981 that battlefield automation from 1981 to 1985 would cost the Army over $22 billion. The figure is even more impressive in today's dollars, yet this investment in automation does not guarantee that the Army's computers will function on the battlefield.

In a nuclear or chemical environment, Army computers are not, for the most part, able to survive. In conventional war, computers, while vulnerable, can survive. Conventional war vulnerabilities, however, are aggravated by current and planned computer proliferations to virtually all functional areas and units.

Current computer policies hamper the Army's ability to effectively adapt com-



he Battlefield: Can they Survive?

ter technology to the battlefield. Yet, thout this technology, the Army would emble an army of the past—led by the rse cavalry instead of the air cavalry. e Army cannot ignore computer tech- ogy. Instead, it must harness and adapt computer to battlefield use by chang- policies until it is as comfortable with computer as it is with the radio.

Picture a future battlefield. Respond- to voice commands, the computer l be capable of analyzing myriad in- igence data from a variety of sources l providing the commander near real- e intelligence updates on enemy forces. his role, the computer could serve as orce multiplier, but it could also cre- havoc on the battlefield if the infor- ion it produced was assumed to be llible.

oes using the computer in combat or hinder the Army in defeating the ny? To more specifically answer this stion, battlefield computers used in direct support of the corps and divi- are discussed here. Although many ne following comments are applicable omputers embedded in weapons sys- , this evaluation of Army computer ems is directed toward general pur- computers used in logistics, admin- tion, and command and control sys- .

oughtful and detailed preconflict plan- prevents confusion, doubt and inde- n in times of war. In planning for puter system efficiency and surviv- ability, the Army must address the nuclear, biological and chemical (NBC) environments; the shelters that house and protect the computers; the communications network that links one point to another; and its ability to procure, maintain and standardize computer equipment on the battlefield. Each of these factors affects computer survivability.

The NBC environment can be likened to Cerberus, the three-headed dog of Greek mythology. In this analogy, the three heads are representative of nuclear, biological and chemical threats. U.S. policy on NBC warfare is basically defensive. Nuclear weapons will be used only as a last resort, considered only after all conventional means have been found inadequate.

Toxins or other methods of biological warfare will not be used by the United States under any circumstances. Chemical agents will not be used by U.S. forces first. However, the United States reserves the right to retaliate in kind if they are used on U.S. forces.

We tend to think of a nuclear explosion in terms of thermal effects (heat), radiation and blast (shock waves). However, EMP has emerged as the Army's major problem to overcome in a theater nuclear war. Radiation, thermal and nuclear, and blast impacts on computer equipment survivability depend on the size of the burst and its distance from the computer. EMP, an energy source similar to a lightning bolt but many times greater, is created by the interaction of nuclear radiation with ions in the atmosphere, or the atmosphere and the earth's surface.

The nuclear survivability equation includes another variable—personnel—which must be considered when examining equipment survivability. Because people are vulnerable to radiation and the blast effects of a nuclear detonation, equipment survivability need only equal the operator survivability rate.

Beyond this, it becomes pointless to spend huge sums for engineering and development of computer equipment design. Comments here on blast and thermal and nuclear radiation assume operator survivability.

Computer equipment in a computer shelter must be shock mounted in order to protect it against the shock wave created by a nuclear blast. The heat associated with thermal radiation poses only a minor threat to today's computers.

Trends in computer technology are toward fiber optics, a system that guides light through thin glass strands. Fiber optics are sensitive to thermal radiation, which darkens the glass pipes and chokes off the light. Recent breakthroughs in fiber optics look promising. In tomorrow's computers, however, heat may prove to be a significant problem because of its effects on fiber optics.

Radiation from a nuclear detonation affects computers much more than blast or heat. Within close proximity to the



blast, the transient effects on electronics (TREE) can cause burnout by fusing the closely meshed microcircuits of electronic components.

Before the integrated circuit, TREE was truly transient; that is, the component would stop functioning only while the radiation was passing through the electrical component. With the recent medium- and large-scale integrated circuit technology, the radiation permanently burns out the closely packed transistor circuits.

When an electrical component is burned by TREE or by EMP, the component itself also generates an electromagnetic pulse called "system-generated electromagnetic pulse." With the computer equipment located close together in a shelter or fixed facility, system-generated electromagnetic pulse can affect the computer components in the same manner as EMP. Because newer circuits are less EMP resistant, the significance of EMP over the last 20 years has increased greatly.

The more compact the circuitry, the greater its vulnerability to EMP, and technological progress continues to produce more compact microcircuitry. These advancements, ironically, could be self-defeating. Department of Defense research and development in very high-speed integrated circuits (VHSIC), which pack circuits even more closely together, will make computers more vulnerable to EMP unless the VHSIC community finds a solution to the problem. Table 1 shows how powerful EMP is compared to the power normally handled by other electrical components.

Table 2 compares the EMP effects of various sizes of nuclear detonations. The higher the detonation and the higher the yield, the greater the EMP effect on the earth's surface. An air burst 200 miles up can effectively inundate a theater of operations with EMP. Without a deliberate effort to design and shelter computers against EMP, theater computers will cease to generate the critical information required for timely decision making.

Table 1. Electromagnetic Energy Comparison

Power/Energy Source	Power Density (Watts/Square Meter)
Typical radio receiver	0.001
Typical radio transmitter	100
Directional pulse radar	1,000
EMP	1,000,000

Table 2. Nuclear Explosion EMP Effect on the Earth's Surface

Nuclear Burst (10 Megatons)	EMP Ground Radius Effect
Subsurface	Less than 1 mile
Surface	2–5 miles
Air— 19 miles up	9 miles
Air— 50 miles up	600 miles
Air—200 miles up	All of the United States and parts of Mexico and Canada

In spite of the danger, actions can be taken to protect equipment and lessen the effects of high-altitude EMP (HEMP) on computer electronics. HEMP protective alternatives should concentrate on blocking the electromagnetic energy from reaching the electronic components of the computer, on making electronics resistant to transient effects and on making the electronics systems "fault tolerant." These alternatives are achievable through hardware and software design modifications.

In addition to the computer and its peripherals, power sources are subject to EMP.

Both external, commercial power sources and field generators are vulnerable to EMP. Thus, design requirements need to include all elements of the computer system: the shelter, those components in the shelter and the power sources outside the shelter. Since all Army computers are vulnerable in varying degrees to EMP, computer systems must be designed accordingly.

To continue the analogy, Cerberus's second head represents the possible dangers of biological warfare to computer equipment and personnel. Compared to nuclear and chemical warfare, considerably less work has been initiated and virtually none completed on the effects of biological events on electronics. Because the Soviet Union and its allies are using chemicals and biological agents in Afghanistan, Kampuchea and Laos, the United States has cause to initiate research on the effects of toxins on electronics.



The data processing units above handled a tremendous volume of parts requisitions at division and corps level during last year's major logistics exercise (LOGEX '84) at Ft. Lee, Va.

The concept of chemical survivab is similar to that of nuclear survivab —making equipment survivable onl the point at which enough personnel vive to operate the computer and cor ue the unit's mission. Until recently, search into this third head of Cerb has been limited. Within DoD, comp procurement specifications for chem survivability have been almost none tent.

Two major areas of concern have faced on computer survivability du chemical attack. First, computer op tors cannot physically operate compu effectively in a maximum mission-orie protective posture (MOPP). Second, the chemical enters the shelter and computer, no prescribed procedures

CAPT. JOEL A. BUCK is an operations research system analyst at the U.S. Army Logistics Center. He holds a master's degree in industrial engineering from Kansas State University. COL. RICHARD J. DeBASTIANI, U.S. Army, retired, is an executive with Advanced Technology Inc. in Reston, Va. He holds a master's degree in business administration from Tulane University and served as director of operations analysis at the U.S. Army Logistics Center. He conducted studies on computers on the battlefield when he was a senior research fellow at the National Defense University.



The camouflaged van at left, hauled by a five-ton tractor, shelters an array of automated electronic data processing equipment.





This work station (at right) was in service at LOGEX '84 at Ft. Lee, Va. In spite of the cramped quarters in the shelters, each van is capable of holding multiple work stations.

decontaminating the computer or its pherals. More research should be con- ted by the Army to develop substance procedures for decontaminating elec- ic equipment.

ne approach to protecting equipment n chemical agents is ensuring that the nical remains isolated from the com- r. This is accomplished, for the most , through the use of shelter.

owhere is the Army's struggle with ning more evident than in the defi- cies of its shelters. The primary ob- ve of a shelter should be protecting quipment and personnel housed with- Unfortunately, current shelter designs adequate protection against an NBC t.

ficiencies in shelter design range from poor filters in air conditioners to the lack of a forced air pressure system for keeping contaminants from entering the shelter. Not until 7 April, 1981, did the Army organize a conference to determine the extent of its shelter problem.

It was confirmed at the conference that current shelters provide negligible NBC protection. These deficiencies indicate a major problem in shelter development: the failure to look at the total system; that is, the shelter, power source and vehicle that carries the shelter.

One solution to shelter deficiency requires the retrofitting of existing shelters to make them more protective in the NBC environment. Shelter development, however, has not been coordinated with vehicle development. The results are that shelters, when positioned on vehicle carriers, exceed the maximum carrying weights.

For example, at a cost of about $60,000, the S-250 shelter for the 5/4-ton truck can be hardened, but it will then exceed the carrying capacity of the truck. In fact, without shelter hardening, the 5/4-ton truck with shelter is already near its maximum load-carrying capacity. Trucks exceeding their load-carrying capacities are maintenance nightmares in peacetime. Imagine the problems these trucks would cause in wartime.

Another alternative protection against NBC effects is the development of modified, collective protective equipment. This entails designing a portable protective entrance which, when attached to the shelter, would pass filtered air under pres-



sure over the soldier to decontaminate the individual for nonpersistent chemical agents before he enters the shelter. If this equipment is to be useful, it should be relatively light and easily assembled and disassembled for rapid unit displacement.

Unfortunately, the current protective equipment was designed with little consideration for standard power sources. Shelters with collective protection equipment require a 400-hertz power source; thus, this equipment cannot be mounted on 1½- and 2½-ton vehicles without the use of a power supply separate from the generator which provides power to the electronic equipment housed in the shelter.

All of these problems indicate that any future shelter program should ensure that requirements are developed, doctrine is written for publication and dissemination, and the total system is considered in the development process. In addition, the Army's shelters and those of its allies should be compatible. To ensure interoperability, the United States must have minimum standards of technical specifications with its allies.

North Atlantic Treaty Organization (NATO) and U.S. shelters should protect computer operations against the NBC threat. At present, NATO regulatory requirements and the U.S. hardened tactical shelter program specifications are not entirely compatible. They should be.

How do communications affect computer survivability? The relationship between the computer and communications is direct in a distributive computer system, a computer network with a set of computer systems and terminals that are connected by communications equipment.

Without communication, distributive computer systems are inefficient and ineffective. Subsequent insufficient or untimely information may force the decision maker to make premature or incorrect decisions.

In command and control systems, this can mean the difference between winning and losing.

For example, in the European theater, information is passed over military and commercial communications media such as wire, radio, microwave or satellite. The military and commercial electronic equipment used to transmit and receive this information is affected by the NBC environment in much the same manner as computers. HEMP is a major problem for communication–electronic components. However, nuclear detonations generate different problems with radio communications.

Blackout occurs when radio waves pass through a disturbed region, causing a refraction or bending of the wave. Essentially, the transmitter sends a signal at a given frequency, but the wave bends and arrives at the receiver at a different frequency. Depending on the type of burst and mode of communications propagation, blackouts can last from a few seconds to many hours.

Wire communication does not rely on information passing through the atmosphere. As long as microwave links are not integrated into the wire communications net, wire remains unaffected by blackout. The prudent military planner, however, cannot rely solely on wire as a solution to communications in a nuclear conflict because wire serves as an antenna for HEMP.

The equipment linked to the wire (repeaters, digital switches, computers and the like) will be subjected to voltage surge and burnout. Precautions against HEMP must be foremost in planners' minds. Some initiatives that would make a theater communications system less vulnerable are:

- Identifying critical links and nodes, and planning on protecting these vulnerable points in war with better physical security.
- Planning for using or constructing alternate nodes to critical links.
- Prepositioning end items and repair parts at critical locations.
- Equipping more units with hardened shelters and making them more mobile.

Without reliable communications in war, information stored in the computers becomes degraded, untimely and inaccurate. The Army should be aware of these shortcomings and plan accordingly for all possible theaters of operation, including the continental United States.

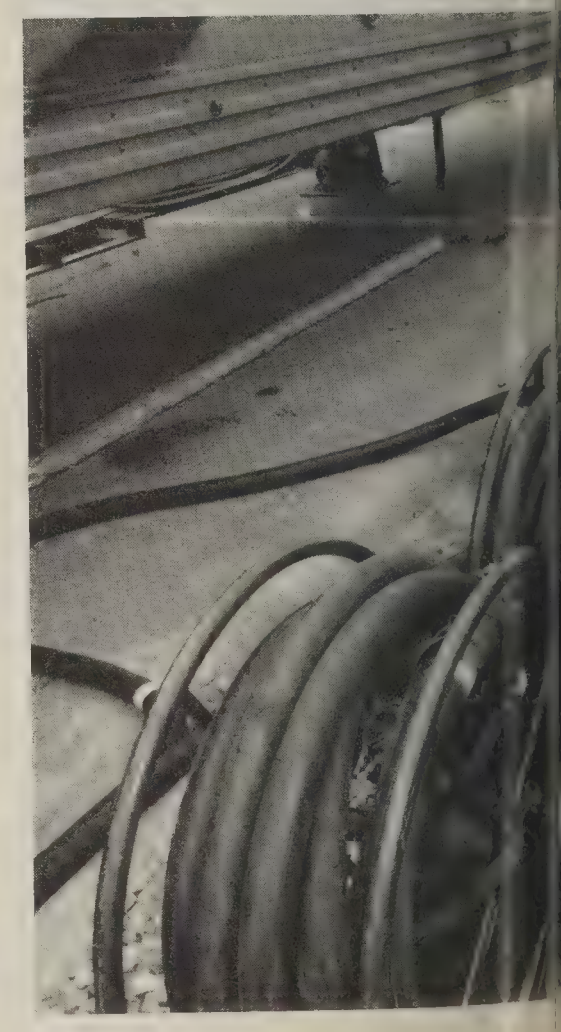
By the late 1960s, the majority of military computers purchased for the theater of operations were the relatively inexpensive commercial computers, which were packaged in a case, "ruggedized" and housed in a shelter (van).

The Army purchased commercial computers instead of military specification computers for three reasons. First, in 1965, Congress passed the Brooks Bill, a law designed to foster competitive procurement of automatic data processing equipment (ADPE). This law gave the House Government Operations Committee (GOC) congressional authority over ADPE procurements.

The GOC's strategy focused on reducing sole source procurements. These oversight pressures caused the services to purchase the least expensive commercial computers.

Research and development (R&D) was costly in the highly competitive computer industry. Consequently, R&D results were highly guarded and considered to be the proprietary right of the company that performed the R&D. Normally, R&D performed under Army contract, unless it has security implications, becomes public domain—available to all computer companies. Thus, to avoid possible legal difficulties, computer companies prefer to perform their own R&D.

To minimize individual company R&D expenditures, computer companies beg



o market their newly acquired computer echnology to the military in the 1960s. ommercial computer sales to the mili- ary were highly profitable for the com- uter industry and inexpensive for the ilitary, especially when compared to ie cost of military specification comput- s. As the DoD budgets got relatively naller and commercial computers got less pensive, pressures from within DoD id from Congress dictated that the Ar- y buy commercial, general-purpose com- uters.

In the last ten years, computer compa- es have found it too cumbersome to ide by government procurement regula- ns. The industry continually expresses displeasure at doing business with the vernment.

Currently, private-sector business is ie times the amount of government siness. With greater than 20 percent urn on investment in the private-sec- market as compared to a return on estment of less than ten percent from vernment business, the computer in- stry now finds it less profitable to pur- government business than it did from 50 to 1973, according to a 1981 analy- of the defense industry. Individual nputer companies are selling their com- rcial computers to the military to main- n volume sales, but computer compa- s are apt to balk at selling military cification computers to the govern- nt if it will involve R&D expenditures proprietary rights questions.

The underlying force in military computer procurements has been fiscal constraints. To keep costs down, U.S. companies and the military have demonstrated little concern about EMP. Today, the Army, with its vulnerable integrated-circuit computers, cannot ignore EMP. Past efforts to save dollars on commercial computers may end up being a double-edged sword, costing the Army valuable time, money and effectiveness while it waits to develop new survivable computers or modify old computers through difficult and expensive retrofit and redesign.

Incorporating EMP design standards into military computers can be accomplished in three ways: by setting military specifications for military computer developments, by establishing minimum industry–government standards for commercial computer developments similar to the Environmental Protection Agency standards for selective industries, or by a combination of these whereby commercial computer specifications are raised to satisfy military use.

The last approach may be preferable, but it will not be easy to convince industry. To go this route costs money. In this approach, DoD or some other government agency would sponsor R&D for an EMP design effort, similar to DoD's VHSIC program.

In the past, the military has tended to specify restrictive requirements which ultimately cause equipment to be overdesigned. Thus, attention must be directed toward identifying requirements, specifying minimum standards and allowing industry to develop the end product. In the EMP area, DoD must develop standards in penetrator protection and isolation, in shielding protection and in specifying telecommunication test standards.

Computer maintenance is a significant problem area when repair parts, repairmen and backup computers are missing. The more different computers there are to support, the more difficult it becomes to provide repair parts support.

This difficulty becomes especially apparent with standardization of computer repair parts virtually nonexistent among computer manufacturers. In addition, the Army's practice of contracting with several manufacturers to provide repair parts can be costly and, in some cases, unreliable.

Army computer repair personnel, another critical factor in the maintenance equation, are few. When it is time for them to reenlist, they are often hired instead by the contractor who manufactures and sells computers to the Army.

In Vietnam, the Army relied on contractor maintenance, but Vietnam was not a nuclear war. There, computers existed only at well-protected base camps. Even so, some computer repair personnel tried to leave the country during the 1968 Tet offensive. Fortunately for the Army, commercial aircraft could not land at Saigon's airfield. Some argue that in any war, with enough money, contractor maintenance will not be a problem. Can the Army afford the consequences if this turns out not to be the case?

In war, what would happen if a computer or its shelter were destroyed? Neither the Army nor the contractor maintains end item stockage to replace the destroyed shelter or computer. If it is a relatively new computer, the contractor probably has many unfilled commercial back orders and no responsibility to replace destroyed Army computers.

In an effort to resolve computer procurement and maintenance problems, the Army has taken its first step toward standardizing Army computers with the development of a military computer family (MCF). The MCF standardization initiatives are moving forward along three fronts—hardware, software and instruction-set architecture.

Hardware in the MCF will consist of three standard computers—a single module computer, a microcomputer and a superminicomputer—all designed to increase computer survivability by stressing relia-



A technician readies the bulky cables (at left) for hookup to a commercial power source before LOGEX '84. These cables provided electricity for each van shelter's computer equipment and communications needs.

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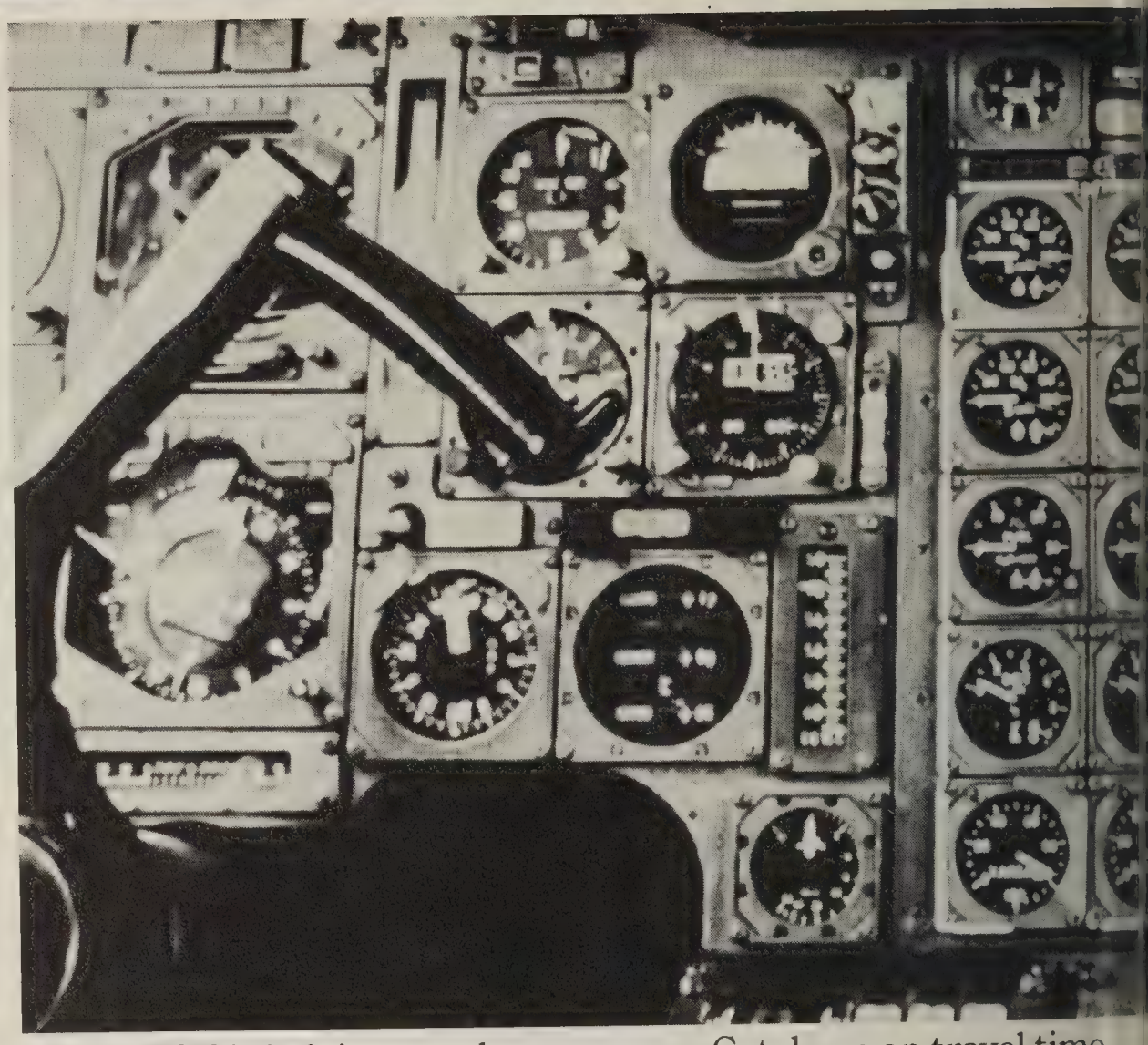
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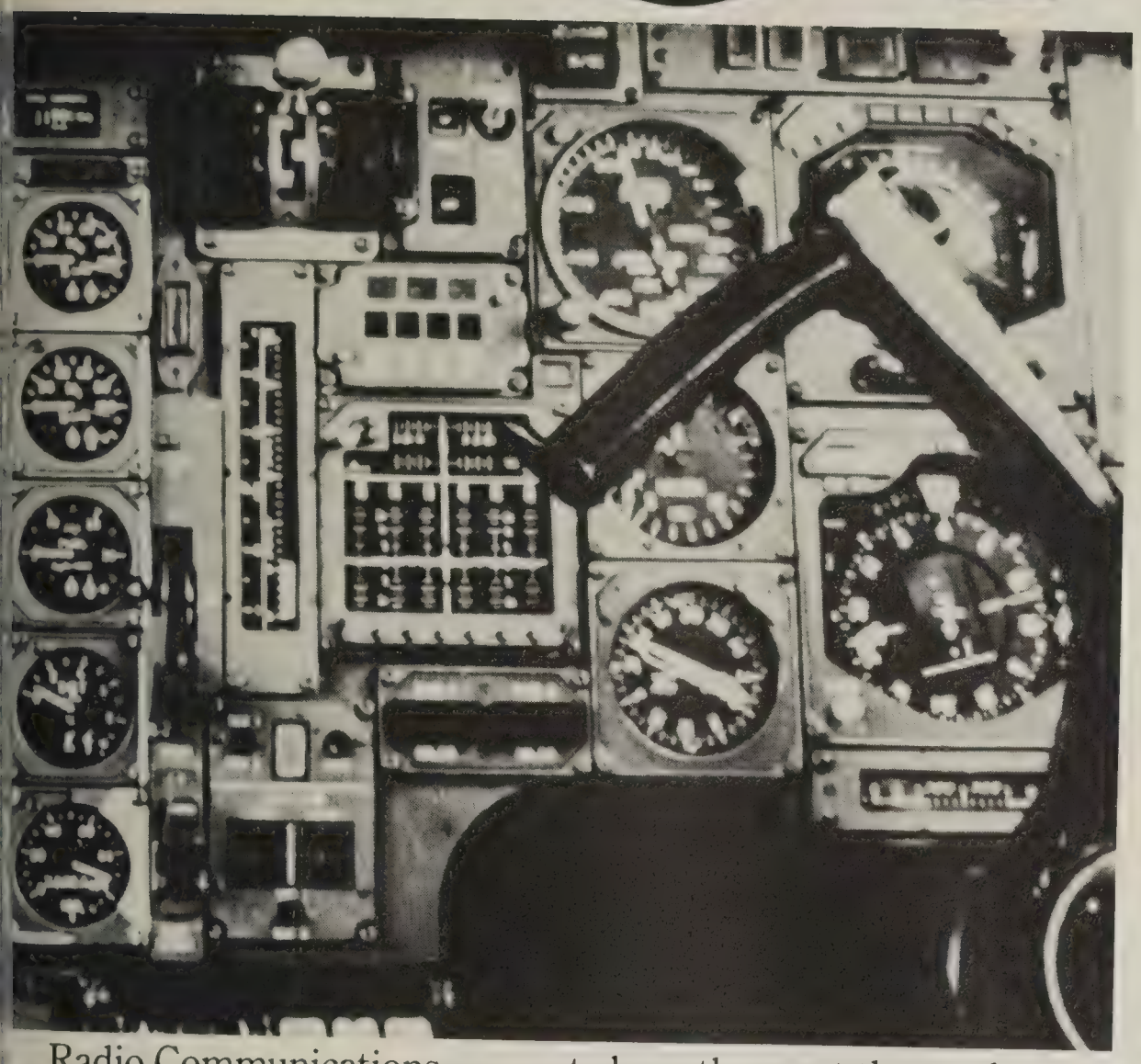
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bility and maintainability and by providing for computer redundance and standardization. In addition, the Army needs to simplify the procurement process for obtaining theater-level, mission-critical computers.

Software standardization requires one computer language and a standard computer language compiler. DoD approved ADA, a high-order programming language, on 1 January, 1981, as the standard DoD computer language. So, from 1 January, 1983, all battlefield automated systems under engineering development, with the exception of administrative and logistics systems, are required to use the ADA language.

Currently, MCF is designed for only one compiler, ADA. Since logistics and personnel systems are written in COBOL, another computer language, they cannot use MCF computers unless logistics and personnel systems are rewritten in ADA, a translator is built to convert COBOL to ADA, or a COBOL compiler is built for the MCF. A time-phased plan to evaluate these three alternatives is required before MCF development is too far along. In the event that the third alternative (building a COBOL compiler) is selected, this compiler should be built before the MCF production decisions are made.

The controversial aspect of the MCF program is the standardization of the instruction-set architecture. The General Accounting Office's and industry's major argument against this standardization is that it will stifle and delay the contractors' use of state-of-the-art technology. Hardware and architecture standardization will automatically place the fielded MCF, even with a planned technology insertion program, one generation behind technology advancement.

The MCF time-phase plan calls for a new upgraded MCF every five years. With computer technology turning over every two to four years, this means MCF will be nearly eight years old before it is replaced with and upgraded MCF. So, what is new?

Today's division combat service support and theater command and control computers are without a standard instruction-set architecture, have different operating systems and compilers, and are well over ten years old. At least, with standard instruction-set architecture in the MCF, software changes will be minimal.

In addition to simplicity, standardization provides flexibility. The three standard compatible MCF computers give the Army just that. A distributive system, once developed, could provide an option which decentralizes management functions, computer processing and computer operations.

Such systems increase survivability during war by providing the user with flexibility through equipment and system redundance and through the decentralization of functions. Distributive systems with MCF initiatives should increase survivability, ensure continuity of operations and dispersion on the battlefield, and provide flexibility through redundance during periods of partial incapacitation or equipment relocation.

Command and control system developments at the tactical theater level are in their infancy. Thus, the Army can take advantage of the lessons learned from the development of its more mature systems. Lessons learned from the computerized supply system, for example, are applicable to command and control systems. Its critical elements of reliability and availability are key objectives of any command and control system.

Two personnel areas, assignments and authorizations, have been identified as troublesome to the supply system and are also applicable to command and control systems. Specific lessons learned in this area are:

- Do not delete spaces when converting manual to automated operations without considering the possibility of reverting to the manual mode in war.
- Consider using table of organization and equipment (TOE) automation augmentation for war.
- Be prepared to use and adjust the reenlistment bonus for critical computer skills.
- Consider establishing contractor-dependent spaces as mobilization designee positions.

The Army concept of dispersing command posts into cells relies heavily on communications facilities transmitting information from one cell to another. A breakdown of any of the nodes in the communications network will cause an information imbalance in the system.

A courier can serve as the backup means of delivering information. However, couriers should not be functional personnel with designated duties. Instead, wartime courier augmentations to unit TOEs should be established for each command post.

Authorizations can also be affected when manual systems (such as the intelligence and electronic system) are automated. Pressure may develop to give up the personnel whose functions are automated. This pressure should be resisted until the system is fully fielded and operationally tested and has undergone some evolutionary development. Unit authorizations or wartime augmentations must be retained for manual operations until Army systems are made totally survivable.

Programs of instruction of ADP functional courses for active and reserve components forces provide inadequate ADP training. To remedy this, the Department of the Army should:

- Establish a minimum number of hours of ADP training in functional advanced courses. ADP is becoming a management tool under the direct control of the functional managers.
- Include in special courses which produce functional ADP managers specific instruction on ADP security, continuity of operations training and procedures for modifying systems software.

Current peacetime automated systems are too cumbersome for wartime operations. The Department of the Army should instruct Army Training and Doctrine Command and functional system designers to
- Develop abbreviated wartime files from the current peacetime system for immediate implementation upon the outbreak of hostilities.
- Remove nonessential processing to the theater rear or the continental United States (for example, financial management) and reduce status and follow-up processing in the theater.

Over the years, our nation's defense has moved forward with technology, from the single-shot Kentucky long rifle to automatic weapons, from horse-drawn cannons to self-propelled howitzers and from the wireless telegraph to space satellites. Electronic technology—computers, microprocessors and integrated circuits—represents another breakthrough. Wise use of this technology can enable the United States to make decisions faster and more accurately.

Like many new technologies, microcircuitry provides great opportunities for use in defense systems. At the same time, however, it introduces problems that must be solved as nations and their adversaries expand the use of electronics on the battlefield. Computers now create problems in war.

The challenge is to make computers survivable, inexpensive, reliable and maintainable on the battlefield. Once modified and fine tuned, computers can help U.S. forces for a decisive victory.

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AUSA President's Report

By Joseph F. Caligiuri
President, AUSA

This past year has been a dynamic one for your Association. Our activities in support of our Ar-y, our soldiers and their families have t only increased but have been verifi-ly more effective. It has been a proud ar for me to have served as your presi-nt.

just as our membership covers a broad ctrum of individuals and companies in-lved with and supportive of the Army, too, is the range of objectives on ich your Association has been working. AUSA has had a busy year on Capitol l. It began with testimony on military rement before the Senate Armed Ser-es Committee this spring and private etings between the executive vice pres-nt and committee chairman Sen. Barry Goldwater (R.–Ariz.). Correctly sens-that this would be the year Congress uld vote to require the Defense Depart-nt to propose a money-saving change military retirement, the Association sented in its testimony a proposal that uld satisfy the demand to reduce costs le maintaining the youth and vigor of present force structure. We also were to present our proposal to the De-e Department. It is still too early to w what the final legislation will look but we are confident it will contain e of AUSA's suggestions.

y far our biggest legislative effort this was a "full court press" for the pro-ion of binary chemical weapons. For past several years, senior military of-s of all the services and of this Asso-on have testified to the absolute ne-ty of an offensive chemical capabil-as a deterrence.

Until this year, we were always defeated on the House floor. This year it was different; we won. This victory was accomplished through some very hard work by AUSA's congressional contacts. We asked over 100 of our contacts—members who have agreed to contact congressmen when we ask them—to urge support for binary weapons production. The response from them was indeed impressive. So impressive, in fact, that we earned a thank-you from our Commander in Chief, President Reagan.

Some of the other issues we successfully worked with Congress on during the year included:

- A new G.I. Bill, which came into effect 1 July.
- Modification of the Survivor Benefit Plan (SBP) divorcing it completely from the social security system.
- Pay raise for active-duty military.
- Establishment of a cost-sharing dental benefit plan for dependents of active-duty personnel.
- Enhanced travel and transportation allowances for military families.

Our legislative liaison effort with Congress has improved substantially. We have increasing dialogue both with the members of Congress and their staffs. Our own AUSA members, our congressional contacts in the field, have proven, as I indicated earlier, to be especially effective. I urge strongly that more of you sign up to help us in this program. It does not require a lot of your time but, in aggregate, greatly strengthens our efforts.

We became actively engaged with and continue working with the Army's new Community and Family Support Center, which came into being this year. Many of our efforts in support of soldiers and their families will be enhanced by our close cooperation with this new center.

One of our first efforts in their support was a survey we conducted for them through our chapters, analyzing the security deposits demanded of soldiers for utilities required in their housing. We will be working very closely with the Center in the future.

We continue to produce valuable materials in support of our major objectives. The positive projection of the vital importance of Landpower as the keystone of our national defense efforts has continued to be the underlying base of most of what we have undertaken.

This year, however, it has been accom-

Complete Coverage Next Month

This issue of ARMY was being printed at the time the Annual Meeting was taking place, making it impossible to provide detailed coverage. The traditional special Annual Meeting section —carrying in-depth reports on meeting events, photographic coverage and resolutions—will be published in the December issue, which will be in the mail in late November.

THE EDITORS

panied by increased efforts to describe the needs of the officers, noncommissioned officers and enlisted men and women of the Army and their families. Finally, we have continued our vigorous counterattacks against misinformation in the press and other media and our efforts to "set the record straight" by correcting the oft-times misguided, but often highly publicized, ideas put forth by the so-called "Military Reformers."

Since the last Annual Meeting, we have published and distributed widely the second edition of our *Landpower Handbook;* our annual year-end assessment of the world situation entitled "Coexisting with Crisis"; a fact sheet entitled "Military Retirement—A Primer"; a detailed "Analysis of the FY 1986 Defense Budget" and a separate pocket summary thereof; an in-depth special report on both troop and family "Army Housing"; and we have just distributed a new and revised edition of our portfolio of point/counterpoint papers on "Issues Impacting on the Land Forces of the United States."

Each week we have turned out and distributed our Defense Report newspaper columns which go to some 950 newspapers and some 3,000-plus other addressees across the country. I am glad to report that we continue to receive favorable comments on the content and quality of these publications and get many requests for copies beyond our initial distribution.

These activities in support of Landpower and the Association's objectives are underwritten by the Landpower Education Fund which is supported by funds other than individual members' dues. The Fund is derived primarily from contributions from our chapters, sustaining, corporate and individual members. I am pleased to be able to report to you that support for the Fund, as reflected in contributions during the Fund year since the last Annual Meeting, continues to grow, particularly among our individual members, over 700 of whom have contributed this year.

Last year, I told you that we urgently needed greater chapter support—and we are beginning to have some success in that area. With 71 of 139 chapters contributing, we have passed the 50 percent mark for the first time—but almost 49 percent did not participate. I hope they will seriously consider doing so in the months and years ahead as we continue our efforts to make the Fund grow to sufficient size to endow the annual costs of our vital Landpower Education efforts.

I have had the opportunity since the last Annual Meeting to visit with a number of our chapters and I am impressed with the wide variety of their activities in support of the Army, the people who serve and their families. For example, last year our chapters spent more than $300,000 on soldier recognition programs and $50,000 on scholarships.

We have reached a record high in corporate membership at 6,502—a further indication of the growing effectiveness of our chapters as community relations activists at the local level. Our individual membership continued above the 160,000 level. We chartered eight new chapters in the last year and disestablished two for inactivity for a net gain of six. Twelve new ROTC companies were chartered during the year.

Our regions and the European department had the most effective meetings this year they have ever had, and chapter attendance at these was at an all-time high. All are encouraging even greater activity among the regions to assist our prese chapters and to develop new ones.

We expanded our staff last year to i clude a directorate of Membership Se vices. This office is charged with upgra ing and broadening our insurance pr grams, will handle our awards progra and supervise our enlisted retiree suppo effort and other activities in support the membership. Currently, this directo ate is involved in a study with the Arm Surgeon General to determine what o Association can do to assist in getti greater resources to support the Medic Services and to help improve their pr fessional image. Before leaving the ar of chapter operations, I want to ma special note of the fact that our Braxt

George Catlett Marshall Medal



Ambassador Paul H. Nitze *(center) accepts AUSA's highest award, the George Catlett Marshall Medal for selfless service to the nation, from the chairman of the Association's Council of Trustees, John W. Dixon. AUSA President Joseph F. Caligiuri (left) displays the citation. The presentation was made at the George Catlett Marshall Dinner at the close of AUSA's three-day Annual Meeting. Mr. Nitze, now special adviser to the President and secretary of state on arms control matters, was cited for the "wise counsel, brilliant direction, unfailing integrity and steadfast devotion to duty" that "have made him a leading contributor in the international arms control arena." During more than 40 years of public service, the citation noted, Mr. Nitze "has been at the forefront in addressing the issues and developing the policies which have safeguarded our national security and guided the conduct of foreign affairs." Specifically cited was Mr. Nitze's service as director of the State Department's policy planning staff during the Truman Administration, where "he supervised the preparation of NSC 68 (National Security Council Memorandum 68), the first comprehensive long-term statement of U.S. strategy for dealing with the Soviet Union in the post-war years, a strategy which has done much to preserve our freedoms, and indeed shape our lives in the ensuing decades." After successive service during 1961–69 as assistant secretary of defense for international security affairs, secretary of the Navy and deputy secretary of defense, the citation notes that Mr. Nitze's acceptance of a post as Defense Department representative to the Strategic Arms Limitation Talks (SALT) with the Soviet Union (1969–74) represented "a refocusing of his considerable talents to defense by other means—arms control." The citation also notes Mr. Nitze's service as chief of the U.S. delegation to the Intermediate-Range Nuclear Forces Negotiations with the Soviet Union during 1981–84. "This American Patriot," the citation reads, "has served seven presidents, thereby exemplifying the standards of high dedication and devotion to duty established by George Catlett Marshall, that outstanding soldier and statesman in whose memory this award is presented."*

Best Chapter Awards

Best Chapter Overall: **Dix** (chapters with more than 1,300 members); **Sunshine** (chapters with 601-1,300 members); **Mid-Palatinate, San Bernardino-High Desert** (chapters with 301-600 members) tie; **Polar Bear** (chapters with 100-300 members). Runners-up: **Braxton Bragg** (over 1,300); **Francis Scott Key, Henry Leavenworth** (601-1,300); **Albuquerque** (301-600); **Mid-America, Topeka** (100-300).

Chapter Most Active in Pursuit of AUSA Objectives: **Braxton Bragg** (chapters with more than 1,300 members); **Sunshine** (chapters with 601-1,300 members); **Albuquerque** (chapters with 301-600 members); **Topeka** (chapters with 100-300 members). Runners-up: **Dix** (over 1,300); **Francis Scott Key** (601-1,300); **San Bernardino-High Desert** (301-600); **Capital District of New York** (100-300).

Best Overseas Chapter: **Polar Bear.** Runner-up: **Mid-Palatinate.**

Best General Membership Meetings: **Korea** (chapters with more than 1,300 members); **Sunshine** (chapters with 601-1,300 members); **Gallant Pelham** (chapters with 301-600 members); **Topeka** (chapters with 100-300 members). Runners-up: **Dix** (over 1,300); **New York-Col. Joseph Markle** (601-1,300); **Albuquerque** (301-600); **Cincinnati** (100-300).

Best Chapter in Support of Reserve Components: **Braxton Bragg** (chapters with more than 1,300 members); **Sunshine** (chapters with 601-1,300 members); **Albuquerque** (chapters with 301-600 members); **Frontier** (chapters with 100-300 members). Runners-up: **Indiana** (over 1,300); **Francis Scott Key** (601-1,300); **Arizona Territorial** (301-600); **Goyette-Tucson** (100-300).

Best Corporate Member Support: **Coastal Empire** (chapters with more than 1,300 members); **Sunshine** (chapters with 601-1,300 members); **San Bernardino-High Desert** (chapters with 301-600 members). Runners-up: **Korea** (over 1,300); **Henry Leavenworth** (601-1,300); **Mid-Palatinate** (301-600).

Best Chapter Newsletter: **Fairfax-Lee, George Washington** (chapters with more than 1,300 members), tie; **Sunshine** (chapters with 601-1,300 members); **Columbia River** (chapters with 301-600 members); **Topeka** (chapters with 100-300 members). Runners-up: **Indiana, Tennessee-Kentucky** (over 1,300); **Virginia Peninsula** (601-1,300); **Albuquerque** (301-600); **Southern New Mexico** (100-300).

Special Awards: **Chattahoochee Valley-Ft. Benning** (for outstanding service to the soldier); **Tennessee-Kentucky** (for an outstanding community relations program).

Largest Overall Membership: **Braxton Bragg.** Runners-up: **Tennessee-Kentucky, Chattahoochee Valley-Ft. Benning.**

Greatest Percentage Increase in Membership: **Dix** (chapters with more than 1,300 members); **Gen. Joseph W. Stilwell** (chapters with 601-1,300 members); **Mid-Palatinate** (chapters with 301-600 members); **Mid-America** (chapters with 100-300 members). Runners-up: **Spearhead** (over 1,300); **San Jacinto** (601-1,300); **Bavarian Alpine** (301-600); **Polar Bear** (100-300).

Greatest Percentage Increase in Civilian Membership: **Dix, Gen. Creighton W. Abrams** (chapters with more than 1,300 members), tie; **Robert E. Lee** (chapters with 601-1,300 members); **Bavarian Alpine** (chapters with 301-600 members); **Polar Bear** (chapters with 100-300 members). Runners-up: **Old Ironsides** (over 1,300); **San Jacinto, Henry Leavenworth** (601-1,300); **Norddeutschland, Mid-Palatinate** (301-600); **Mid-America** (100-300).

Best Chapter Membership Renewal Rate: **Fairfax-Lee** (chapters with more than 1,300 members); **Francis Scott Key** (chapters with 601-1,300 members); **Rhode Island** (chapters with 301-600 members); **Gen. William C. Westmoreland** (chapters with 100-300 members). Runners-up: **George Washington** (over 1,300); **Massachusetts Bay** (601-1,300); **Middle Forge** (301-600); **Ethan Allen, Texas Capital Area** (100-300).

Largest Corporate Membership: **Braxton Bragg** (chapters with more than 1,300 members); **Japan** (chapters with 601-1,300 members); **Fort Worth** (chapters with 301-600 members); **Polar Bear** (chapters with 100-300 members). Runners-up: **Korea, Tennessee-Kentucky** (over 1,300); **Mediterranean, Susquehanna** (601-1,300); **San Bernardino-High Desert, Mid-Palatinate** (301-600); **Chambers Fort, Greater Yuma** (100-300).

Greatest Percentage Increase in Corporate Membership: **Dix** (chapters with more than 100 points); **Henry Leavenworth** (chapters with 38 to 100 points); **Polar Bear** (chapters with 12 to 37 points); **Bavarian Alpine** (chapters with 2 to 11 points). Runners-up: **Bogardus S. Cairns, George Washington** (over 100); **Puerto Rico, Gen. Creighton W. Abrams** (38-100); **New York-Col. Joseph Markle, Fort Armstrong** (12-37); **Mother Lode, Arkansas** (2-11).

gg Chapter is the first in our history exceed 20,000 members.

his has been a busy year as well for sustaining members, which now num- 218.

March 1984, we inaugurated a series monthly breakfasts for industry to ch we invited senior leaders of the Army, civilian and uniformed, to speak. The Washington Landpower Forum, as it is called, has been extremely popular and is now institutionalized.

In mid-May, we held an executive symposium at the Army War College, Carlisle Barracks, Pa. This 3½-day session was the largest ever held by AUSA, attracting nearly 500 participants from industry and the military. The symposium was jointly sponsored by the Army's Training and Doctrine Command and the Air Force's Tactical Air Command. It presented an in-depth look at the progress being made with the Army and Air Force initiatives undertaken by the Chiefs of Staff of the

Gen. Creighton W. Abrams Medal



Maynard R. Ashworth Sr. *(left) accepts the Association's Gen. Creighton W. Abrams Medal for "exceptional contributions to and in support of the United States Army" from AUSA President Joseph F. Caligiuri. The presentation took place at the opening ceremonies of the Annual Meeting. Mr. Ashworth, president* emeritus *of the Columbus, Ga.,* Ledger-Enquirer, *was cited for many years of leadership in civil-military relations in the Ft. Benning area, including Columbus and Phenix City, Ala. Specifically mentioned was his involvement since 1947 in the area's Civilian-Military Council and foundation of the* Bayonet, *"a free weekly paper which has had great success in keeping soldiers, their families and the civilian community informed of on- and off-post activities. . . ." Mr. Ashworth, the citation notes, has been a member of the local AUSA chapter since its founding, serving as president and on the board of directors, and "has made many lasting contributions to soldiers, their families and local, state and national governments."*

President's Gold Medal



Brig. Gen. John A. (Andy) Seitz, U.S. Army, retired *(left) was awarded the President's Gold Medal for exceptional service to the Association, at the opening ceremonies of the Annual Meeting. Making the presentation is AUSA President Joseph F. Caligiuri. Gen. Seitz, a charter member of AUSA, was cited as "a prime mover in development of Association affairs and projects" during 17 years as an officer and member of the Board of Governors of the Ft. Riley-Central Kansas Chapter. "During his presidency," the citation notes, "the chapter nearly quadrupled in size." Also mentioned were his leadership of AUSA participation in "the largest D–Day celebration held outside Normandy" in 1984, and in securing Kansas Chamber of Commerce recognition of Ft. Riley. "When problems and challenges have arisen along the seam between the military and civilian community," the citation reads, "it is to General Seitz that both parties have turned for advice and resolution."*

two services. In mid-November, following this Annual Meeting, AUSA will host an executive seminar at the National War College during which the commanding general, Army Materiel Command, Gen. Richard H. Thompson, will discuss the implications for industry of a number of new initiatives which he has undertaken.

There are three AUSA sponsored events now planned for 1986.

The first of these will be held in mid-February and will be a dramatic departure from anything we have sponsored before. The commander in chief, United States Readiness Command, will host a 2½-day symposium at his headquarters, MacDill Air Force Base, Tampa, Fla., the purpose being to help industry understand the unique role of joint commands and their equally unusual requirements.

The second event is sponsored by the Training and Doctrine Command and differs from the annual mid-May symposium at Carlisle Barracks in that it will be held at one of TRADOC's posts, either Ft. Benning, Ga., or Ft. Sill, Okla. The genesis of this type of program is to offer industry an opportunity to be with real live soldiers in their natural setting, using equipment and systems for which industry has been responsible.

TRADOC runs the schoolhouse for the Army and is the user representative for materiel acquisition. This symposium offers a chance to see what is going on rather than just hearing about it. If industry is favorably disposed to this program, we intend expanding it to include other posts, the National Training Center, and the like.

Finally, AUSA will again host a TRADOC sponsored mid-May symposium at the Army War College, Carlisle Barracks. It promises to be another dynamic activity and equally as interesting as the one in 1985.

We are also engaged currently in a most important exercise in support of the Presidential Blue Ribbon Commission on Defense Management headed by David Packard. The impact of Commission recommendations on future budgets could be substantial.

We have a task force of our Senior Associates developing material for the Commission to consider and will have other input into their deliberations. We belie this Commission has the potential f really major impact on the whole acqui tion and procurement system—and, m importantly, future defense budgets.

ARMY, AUSA's award-winning profe sional magazine, consistently turned c the biggest issues in its history over t past year, eclipsing totals set by it and predecessors going back before 1900. T most recent issue, the 1985–86 ARMY *Gre Book*, is the largest single issue we ha ever produced, at 516 pages. This r ord was achieved through increased nu bers of both editorial and advertisi pages, all of which were produced ir highly efficient, self-contained editor section which can handle all the stages publication to the final printing.

Over the year, ARMY articles and e torials addressed a great variety of issu which were not only widely read in m tary circles but were widely reprinted other publications.

Being there has always been an imp tant aspect of ARMY's dealing with the sues, and over the past year the editor chief and staff members visited many po in Europe and the continental Uni States to talk with troops, watch train and collect information on how the A my is maintaining readiness. This eff to keep readers informed includes a c tinuing close contact with sources at levels and sectors in Washington.

One of ARMY's most popular and formative features of the past seve years has been its interviews with k senators and congressmen. This year, magazine carried a widely quoted int view of Sen. Barry M. Goldwater, first published after he became chairm

ROTC BEST COMPANY AWARDS

Most Active Company: **Dakota Company** (North Dakota State University).

Largest Company: **Terry D. Allen Company** (New Mexico Military Institute).

Best Overall Meetings: **Capt. Sylvan K. Bradley Memorial Company** (University of Missouri at Rolla).

Best Activities to Assist the Institution: **Gen. Courtney H. Hodges Company** (North Georgia College).

Best Activities to Assist the ROTC Unit: **Tenth Pennsylvania Company** (Indiana University of Pennsylvania).

Best Activities to Improve Members' Military Qualifications: **Peacock Company** (St. Peter's College).

Best Programs to Enhance Community Relations: **Capt. George Markos Company** (Texas Christian University).

Special Award: **VPI Company** (Virginia Polytechnic Institute and State University).

f the Senate Armed Services Committee. lore recently, ARMY published an ac- ount of an interview with Sen. Pete Wil- n (R-Calif.), which has also been wide- read outside of ARMY's readership. We an to continue this emphasis on con- essional views.

There has also been a great deal of ader interest in a continuing series of it histories that ARMY has published, e most recent in the new *Green Book*. well-received offshoot of this program as a special reprint of a series on the rmy's regiments.

It is apparent that our monthly *AUSA ews* is becoming a more important edu- tional tool in keeping our members in- rmed by providing timely and exclu- e news coverage on matters affecting tional defense, the Total Army and the my family.

The *News* also continues to give a full counting of national headquarters ac- ities with the White House, Congress d the Department of Defense.

With its "Capitol Focus" and "Commentary" columns, its monthly editorial from the cutive vice-president, the memoran- m to chapter presidents and its many d diverse feature articles, the *News* re- rts the workings of national headquar- s to each and every member.

Also this year, on a selected basis, the *ws* has initiated a new feature entitled sue of the Month," which has dealt h complex topics such as chemical rfare, the uniqueness of military ser- e, the size of the active Army, the Ar- 's budget and the impact of a no- wth budget.

n addition, *AUSA News* continues to er chapter meetings, events, activities projects, making this newspaper tru- esponsive to the needs of our mem- s.

s is readily apparent, our Annual ting continues to be the premier show- of Landpower in the free world. s year, again, all events have been out for weeks and again this year had more requests for exhibit space t we could honor—even though we e more than 145,000 square feet in

ore importantly, it is the capstone of Association year—a recognition of re we've been and what we have ac- plished and a charting of our future se. I am proud to be part of it and ow that you join me in expressing deepest appreciation to our Annual ting Committee, to Lt. Gen. Roy man and the valiant staff of our quarters who have brought off this endous task in such style.

e many accomplishments of the As- tion in the year past are the fruits of the labors of many. I have already alluded to growing activities of the chapters and members in the field. Certainly, we are blessed with a highly motivated, thoroughly professional headquarters staff that has earned the respect and admiration of all those with whom they deal. The Council of Trustees, the Advisory Board and the committees thereof give fully and freely of their time and talents. It is marvelous to behold the amount and quality of the volunteer effort that goes into making our Association what it is. It certainly makes me proud to have the opportunity to serve as your president.

As we view with a certain amount of pride and pleasure the accomplishments of the year just past, we are aware of the challenges just ahead. We will be facing a period which may portend seriously reduced defense budgets. Attacks on the whole compensation system for the military will continue. And, if we are not fully alert, the deterrent capability as well as the fighting ability of our forces may be diminished. We must rededicate our efforts to ensuring that the Army continues to be an attractive place to live and work for our soldiers and their families. We must also use our full resources to maintain an adequate force structure for our Army; to continue to modernize its weapons and equipment; to improve its readiness; and ensure its sustainability.

That's the challenge in front of us. I feel sure that our Association will respond as it always has with vigor, determination and imagination.

80 Chapters Receive Merit Chapter Awards

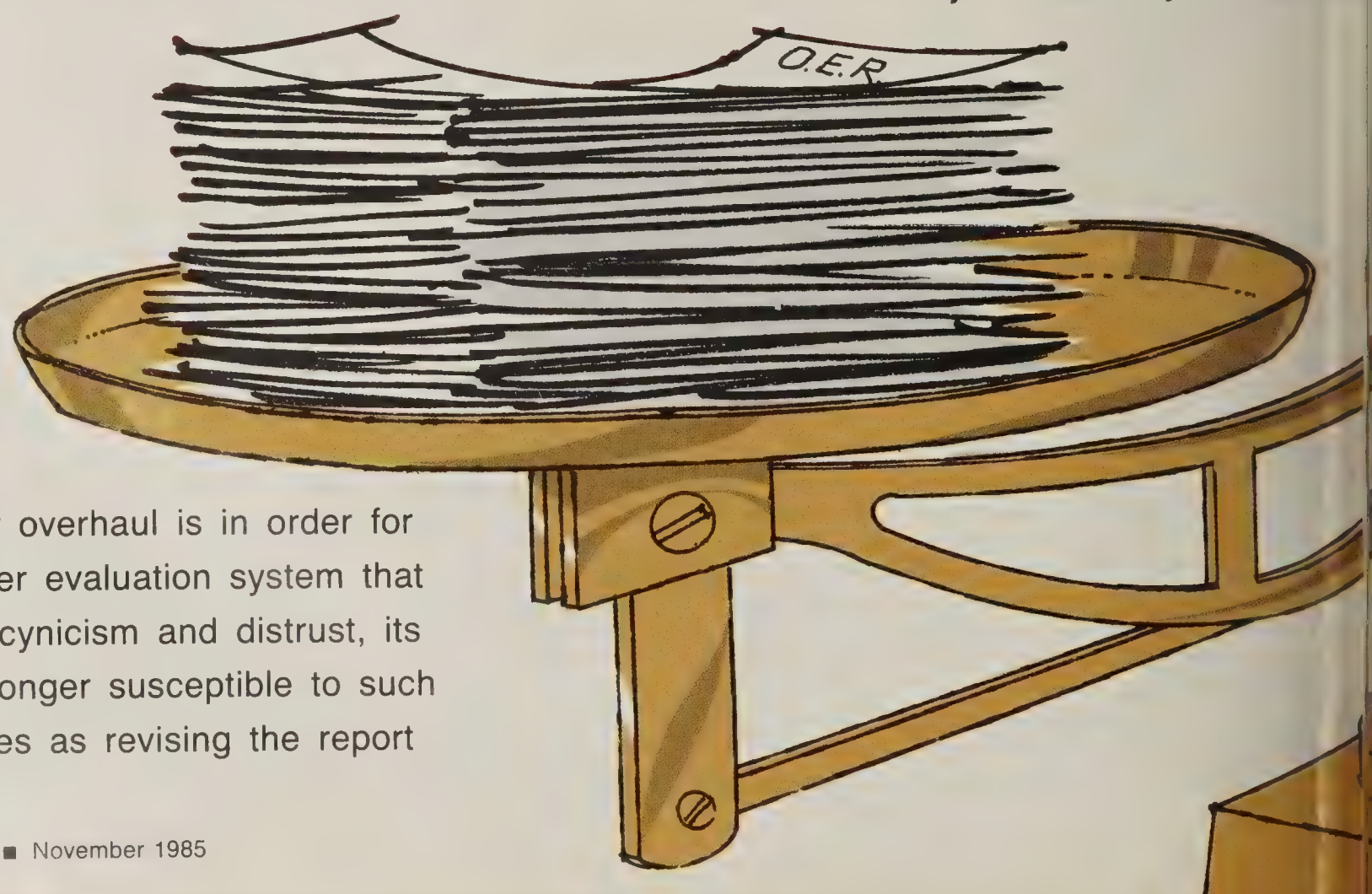
The Merit Chapter Award was instituted on 1 July, 1968, to recognize chapters for overall excellence in performance during the chapter operational year, which runs from 1 July through 30 June. A special streamer is awarded to each Merit Chapter for display on its AUSA flag. All chapters are judged on such aspects of performance as special projects, general meetings, membership, organization and administration.

There is additional recognition for chapters that achieve their operational year membership goals, in the form of a star on the streamer. At the 1985 Annual Meeting, these 80 chapters were designated as Merit Chapters; those also awarded the membership star are indicated by an asterisk (*):

AFCENT Community
Alamo
Albuquerque
Arizona Territorial
* Ark-O-Tex
Berlin
Blue Mountain
Bogardus S. Cairns
* Braxton Bragg
Buckeye
Capital District of New York
Central California
Central Ohio
Central Texas-Ft. Hood
* Chattahoochee Valley-Ft. Benning
Cincinnati
Coastal Empire
Columbia River
Connecticut
Dallas
Daniel Boone
Des Moines Freedom
Detroit
* Dix
Douglas MacArthur
Fairfax-Lee
Florida Gulf Stream
Ft. Leonard Wood–Mid-Missouri
Ft. Monmouth
Ft. Riley-Central Kansas
Ft. Sheridan-Chicago
Fort Worth
Francis Scott Key
Frontier
Gallant Pelham
Gen. Creighton W. Abrams
General of the Army Omar N. Bradley
George Washington
Goyette-Tucson
Greater Los Angeles
Hawaii
Heidelberg
Henry Leavenworth
Indiana
Japan
* Korea
Maj. Gen. William F. Dean
Massachusetts Bay
Middle Forge
Mid-Palatinate
Milwaukee
Minutemen
New River Valley
Newton D. Baker
New York-Col. Joseph Markle
Pikes Peak
* Polar Bear
Rhode Island
Robert E. Lee
St. Louis
San Bernardino-High Desert
San Diego
San Francisco
San Jacinto
Seattle
Southern Arizona
* Southern New Mexico
Southwest Oklahoma
* Spearhead
Stuttgart
Suncoast
Sunshine
Susquehanna
Tacoma-Ft. Lewis-Olympia
Tennessee-Kentucky
Topeka
Twin Cities
Virginia Peninsula
West Point Area
Yorktown

The OER Cudgel: Radical Surge

By Lt. Col. Larry H. Ingraham



A major overhaul is in order for an officer evaluation system that breeds cynicism and distrust, its ills no longer susceptible to such palliatives as revising the report forms.

In my capacity as the Surgeon General's research psychology consultant, I spend a lot of time recruiting young officers and advising them on their careers. I make suggestions on career-enhancing assignments, additional education and career progression.

I have become discouraged, and I am frightened for the Army. My young officers have gone deaf. They do not hear when I say that the most important career enhancer is doing your job and doing it exceptionally well. I am shouted down by a personnel system bellowing cynicism, distrust and fear.

The symptoms are familiar. Officers, especially junior officers, are running scared. Competition for voluntary indefinite and Regular Army status is so keen that even damp socks while walking on water become a flaw beyond redemption. The cudgel is the officer evaluation report (OER).

Experienced kibitzers of the Army's OER system are now on deathwatch for the present version. Despite glowing reports of the success of the senior rater profile to prevent swelling and bloat, the death rattle is unmistakable. Prognosis is poor; at best we can expect two more years before the current system wheezes and coughs to collapse.

If we are ever to get out of the new form-fear-inflation-new form cycle, we must redesign the system, not revise the OER form. That the problem is the system which embodies the values of the officer corps, not the form, seems to have escaped attention.

The personnel assignment officers' prescription for a palpitating heart and shortness of breath is more educational pills. Like many others, my research psychology officers are commissioned with doctorates, as captains. We are counseled to complete the officer advanced course by correspondence, as a warm-up, before taking it in residence; to become PX heroes with airborne and air assault qualifications, whether we need such training or not; to consider an additional master's degree; and to enroll in the Command and General Staff College, and preferably the Combined Arms and Service Staff School, before we enter the primary zone for major.

We are also counseled to seek a variety of geographically dispersed assignments as a purgative for any experience relevant to performance as Army officers/scientists. My timid protests that no useful work is getting done while my officers are gagging on careerism get imperiously dismissed with, "Do you really want to hurt career potentials?"

A second symptom is widespread cynicism concerning the equity of promotions. As we talk, my youngsters ask how an individual twice passed over for promotion and given a mandatory retirement date can later be found competitive, while a younger individual with dedication and talent obvious to the most casual observer gets passed over by the same board.

What kind of system is it that cannot
scriminate between an officer loved and
spected by subordinates and one who
hated and despised by subordinates
d peers alike?

The personnel physician's remedy for
usea is also familiar: antiseptic records.
y young professionals are told that the
ards have only a few minutes to read
ir entire career record; therefore, they
st be sure the entries on physical ex-
inations, physical training test scores,
ards and decorations, height and weight,
d educational achievement are all cor-
t on the officer record brief.

"You are your own personnel records
nager," they are told and, by implica-
n, "if you don't care, we don't either."
e photograph gets exquisitely detailed
ention, with admonitions to get the
bons on correctly, shave mus-
hes (just for the photo), polish
shoes, press the pants
d don't let your watch-
d show!



eeded

Our ears ring with incredulity at the prospect of promotion hinging on the appearance of a watchband in an official photograph. This is a common side effect of the treatment.

A tincture of testimony is believed helpful in such cases. Members of recent boards get invited to officers' calls to explain the system. They invariably bear witness to all the personnel officers have counseled. They confirm that the boards have only minutes to review each record, that it is easy to distinguish baby eagles from slugs and that discrimination in the broad middle range is difficult.

They always conclude with passionate sincerity, "Given my experience on the boards, I do not see how we could devise a fairer system."

Ear ringing abates, but nausea returns with the personnel officer's concluding caveats: "In the end, it really depends on who is on the board, and whether the president allows discussion or insists on silent voting on the records."

Everyone leaves the briefing feeling better, but wondering what those guys really said. The only ones who genuinely believe in promotion equity are former board members and officers recently selected for promotion. Increasingly keen competition for promotion and retention may soon erode what little credibility exists for the present OER scheme and promotion system. The present system is kept alive by the support form (sometimes as much as a dozen pages listing every conceivable accomplishment), which allows us to believe we control our ratings, and periodic paper enemas given to senior raters to purge their profiles.

Once it becomes obvious that there is little an officer, a rater or a senior rater can do to influence the boards, credibility of the system will collapse. The Army will then, once more, change the OER form.

While waiting for the emergency rescue squad, however, it behooves our Army to review the clinical record:

- The system is rife with the malignancy of careerism fed by unknown, random promotion criteria and spread by a personnel system committed to individual equity and individual advancement, even at the expense of the Army as a whole, if necessary. The latest surveys of the officer corps confirm this view. Further salves and purgatives will not cure the cancer; radical surgery is necessary.
- All serious raters know that they have only two choices on an OER. The first is to retain the rated officer; the second is to sack him or her. Retention requires placing the officer in competition for chief of staff of the Army; sacking requires anything less than that. Since most officers deserve retention at some level, raters really have little choice but to inflate.
- DA Form 67-8-1 (the support form for the OER, also known as "dash one") does not work. We fill it out the week before the rating is due. Chief of Staff of the Army Gen. John A. Wickham Jr. has urged the officer corps to spend more time coaching and counseling subordinates. Nothing much will change, however. What is the use of spending much time on activities when there are no consequences for either rater or rated?
- Our Army promotion system is indeed fair; the majority of promotions are determined strictly at random. Boards agree on the top and bottom quartiles of the records they review, but for the middle half (the majority), each board member uses an idiosyncratic scale for judgment anchored in beliefs as to what each board member feels was important in advancing his or her own career.

Some members attend to photographs and others to physical training test scores. Some attend to early performance and others to recent performance. It does not really matter because the scores are then averaged and ordered by aggregated bias, which our Army calls merit.

As a crap shoot, the system is eminently fair, but neither equitable nor necessarily in the best interests of our Army. When former board members testify that they can imagine no fairer system, they really mean that they did the best they could with the task presented them. Other systems are imaginable.

If the Army were truly interested in promoting organizational health, officer ratings would take three forms: superior ratings, peer ratings and subordinate ratings. A review of the record would quick-

ly show those who please superiors at any cost, those who anger superiors because they dare to stand up for peers and subordinates and those popular with all, but ineffective.

The rating form need not be elaborate (any of the old forms would do). The power of this system lies in the congruence or lack of congruence among the rating sources. This scheme takes the rating from the present exclusive control of officers and their raters and places it within the context of the organization as a whole.

Triangulating on performance would give reality and substance to the current "whole man" hypocrisy so revered among personnel philosophy platitudes.

On second thought, just any old form might not do. Two questions that matter might be added:

- For officers—How confident would you be having this officer on your flank or in support during combat?
- For NCOs—How confident would you be having your child go into combat with this NCO?

Are there any other questions that really matter?

Having three sources of ratings would create problems. One is increased paperwork, which can easily be solved by computer programming. A more serious problem is assessing potential.

One would think that such important judgments would be made only after careful reflection. Presently, the senior rater makes these judgments, but on the basis of the rater's narrative. Judgments of current performance are thus confounded with assessments of future potential.

Promotion boards are also instructed to promote on potential, not to reward past performance, but are constrained to only a few minutes to assess career potential. The system is unfair both to the individuals being considered and to the board members expected to render such important judgments.

If the Army were truly interested in promoting organizational health, performance ratings would be completely separated from assessments of potential. The only task of the senior rater in performance appraisal ought to be to function as a check against rater bias and personal *animus*. No narrative ought to be required unless the senior rater disagrees with the rater's appraisal.

The real task of senior raters ought to be assessment of potential. Such assessments require more data than one year's performance rating. Ideally, senior raters ought to review OERs in five-year blocks and render independent evaluations of potential. These judgments could then be profiled, much as they are now, but with common denominators, and submitted to a board for promotion consideration. Again, computer programming could assist in reducing the paperwork.

The proposed two-stage assessment involving independent ratings of both performance and potential would be enhanced by senior raters who were personally familiar with the capabilities of those being judged. The fact that officers and senior raters are not in place long enough to permit personal knowledge and reasoned reflection on potential speaks loudly about the disruptions caused by present personnel practice.

Peer and subordinate ratings have withstood many academic tests of their validity and reliability. The Army has successfully used them to predict future performance at the U.S. Military Academy, officer candidate schools and the Ranger School and has recently experimented again with such ratings at the Army War College.

Separating senior rater assessments of career potential from rater assessments of performance is also not new to our Army; basing them on different sources of information would be a new wrinkle.

If a better alternative exists for rating officers, why don't we use it?

The answer lies in the psychology of the officer corps, especially the general officer leadership. Those in power to effect change are imprisoned by their own success. After all, a system discerning enough to select individuals as talented as themselves cannot be all that corrupt!

A second source of resistance is the fallacy that performance and potential can be measured. The "dash one" sets the tasks and standards, so the argument runs, and the OER is, therefore, a measure of performance. That is nonsense.

Three officers given the same tasks and standards, but working under three different environmental constraints, will differ in their achievements. One may do very well, but under the conditions could hardly do otherwise. One may be totall satisfactory, but be disappointing, give the extremely favorable odds. One migh accomplish little, but, given the circum stances, may have done one hell of job.

Performance is a human judgment, nc a measurable absolute. So long as w persist in the belief that performance objectively measurable, however, we wi persist in our attempts to root out sub jective, fallible human judgment; we wi continue to refine our "measurements instead of broadening our judgmenta base to reduce our errors through averag ing.

A final source of psychological resi tance to change is the fear that openin up performance assessments to peer an subordinate influence dilutes the powe of command and reduces promotion to popularity contest. That fear is irration al; it has no basis in reality.

Academic studies and Army experienc attest that soldiers are quite capable c discerning who best acts in their best in terests. Yet the fear persists: "No con mittee can ever take away my prerog tives as a commander," snort the succes ful officers in power.

The proposals argued here take awa nothing from the commander. They en hance the role by requiring thoughtfu judgment, especially when the rater, pee and subordinates do not see the rated o ficer in the same way. The fear may a tually be rooted in the terror of havin to stand accountable for judgments ren dered—to justify them and to explain wh the majority might be wrong.

The fear may also have roots in ou reluctance to see ourselves as others s us. Let the Army chief of staff exhort u on the importance of mentoring. We a agree with him. Just let us preserve ou individual illusions that we not only agr but understand, without putting our un derstanding to the test. To be truly a countable may be too much a burden fo the officer corps to bear.

Radical surgery is feasible, but it forc us, the members of the officer corps, look each other in the eye, to be respo sive to superiors, peers and subordinat (you can't fool all of the people all of th time) and to stand accountable for judg ments rendered.

Some of us would argue that the offi cer corps could not survive such a shoc If so, let us pull the plug now before th Republic we serve discovers that its A my officer corps is a nursing home fill with sequestered vegetables.

LT. COL. LARRY H. INGRAHAM, Medical Service Corps, is a research psychologist in the Department of Military Psychiatry at Walter Reed Army Institute of Research. He holds a doctorate in social psychology from the University of Iowa.

ACATT. THE HOW-TO-FIGHT TEAM TACTICS TRAINER.

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MCDONNELL DOUGLAS

No single source of value, whether collective or individual, can impart full meaning to death in battle, but the difference between noble sacrifice and pointless waste depends partly on the attitudes of succeeding generations and ultimately on the moral outlook of the individual soldier.

Those who wear military uniforms face a more real prospect than those in any other occupation of someday dying violently. Death can be feared, risked and its brave victims venerated but, perhaps not strangely, its meaning is rarely discussed by those most likely to suffer it when nations go to war. This is why, in a month when the country pays tribute on Veterans Day to those who have fought, it is appropriate to carry this unusual and sensitive article about military service and death by an infantry battalion commander who was a rifle platoon leader in the 101st Airborne Division in the Vietnam war. The headline below is the last two lines of a poem, "Soldier," which was written in the 1930s by then-2nd Lt. Charles T. (Buck) Lanham, later associate editor of an ARMY *magazine predecessor,* Infantry Journal, *and later still a major general in the U.S. Army. The late Gen. Lanham's poem is reprinted on Page 65.* THE EDITORS□

By Lt. Col. Stephen D. Wesbrook

'. . . Content to Fill a Soldier's Grav Reasons I Shall Neve

Taking advantage of the last three day weekend before June grad uation from the Command an General Staff College, I drove from F Leavenworth, Kan., to New Orleans t drop off my car for shipment to We Germany. My route took me southea through Missouri, Arkansas and norther Louisiana, east across the Mississippi Riv er and then south through Mississipp and southeastern Louisiana.

I crossed the Mississippi at Vicksburg Miss., which 118 years before had bee the Confederacy's last link with its tran Mississippi region. I was three hours ahea of schedule, Interstate 20 ran within mile of the Vicksburg National Militar Park, and it was Memorial Day. I deci ed to stop.

As a cadet and, later, instructor of mil tary history at the U.S. Military Acad my, I had visited most of the eastern ba tlefields where the Army of the Potoma and the Army of Northern Virginia ha



engaged in their deadly wrestling match. A brief tour at Ft. Campbell, Ky., and trips between Ft. Benning, Ga., and my home in Indiana had allowed me the chance to wander over the area where the Army of the Cumberland and the Army of Tennessee had confronted each other for two years without strategic result.

Yet I had never before found or made the opportunity to visit the key battlefields in what historians regard as the decisive theater of the Civil War. The participants in the Western campaigns—waging their fight at the end of a long line of communications, far from the political center of the country—would have found my apparent priorities typical of those in their own era.

A visitors' center dominates the entrance to the national military park. Its displays, literature and audiovisual show describe the equipment and life of the Civil War soldier, lay out the Vicksburg campaign and its military significance and point the tourist in the right direction on a 16-mile car tour of the siege of Vicksburg, the final phase of the long campaign.

Not having prepared for the visit, I refreshed my memory on the details of the Vicksburg campaign, which along with Gettysburg marked the turning point of the Civil War.

By the fall of 1862, Union forces controlled all of the Mississippi except the 130-mile stretch between Vicksburg and Port Hudson, La. As long as the Confederates held Vicksburg, they could maintain communications with the third of the Confederacy west of the Mississippi and prevent the North from reopening the river for its commerce.

In November 1862, Maj. Gen. Ulysses S. Grant moved his army out of south central Tennessee into northern Mississippi. In December, he launched a two-pronged attack on Vicksburg, using the only available avenues of approach in the sparsely populated region—the Mississippi Central Railroad and the Mississippi River.

Cutting the Union line of communications along the railroad and repulsing the riverborne assault at Vicksburg, the Confederate forces under Lt. Gen. John C. Pemberton forced Gen. Grant to withdraw. Winter rains and Confederate river batteries then closed off the northern approaches and put the Confederates out of Gen. Grant's reach until spring.

Gen. Grant responded with one of the boldest decisions of the war. In April 1863, he marched his army downstream on the western bank of the river, crossed the river in boats and moved against the Confederates on the eastern bank. The initially outnumbered Union forces then struck deep into hostile territory, with large enemy forces on either side and no prospect for resupply or retreat.

They fought their way northeast toward Jackson, a rail and road center which, once seized, allowed them to isolate Vicksburg by repulsing Brig. Gen. Joseph E. Johnston. Gen. Grant then turned west toward Vicksburg and, in the fiercest battle of the campaign, succeeded in driving Gen. Pemberton's army back into the city's fortifications while simultaneously thwarting Gen. Johnston's efforts to reinforce Gen. Pemberton with an army he raised to the east.

Realizing the strength of the fortifications, Gen. Grant reestablished communications north and settled down to take the town by siege. The siege of Vicksburg, which was marked by extensive engineering, heavy bombardment and bloody assaults, ended with a truce on 3 July, 1863 (the last day of the battle of Gettysburg). Confederate forces surrendered on 4 July. The South lost an irreplaceable army, the Mississippi and all the country to the west.

The park tour road follows the Union siege line to the Vicksburg National Cemetery, situated on the bluffs overlooking the old Mississippi riverbed, and then turns south and east along the Confederate defense line. Because of the duration and scope of the campaign, and the fact that the issue was decided before the siege itself actually began, the battle lines and historic markers on the tour represent just a shadow of the campaign and

are, in themselves, quite sterile reminders of what occurred.

The cemetery is another matter. Here the significance of Vicksburg in human terms strikes home and compels one to think about the cost and the meaning of what took place along the Mississippi almost a century and a quarter ago.

Seventeen thousand Union soldiers rest in the Vicksburg National Cemetery, overlooking the river that dominated their lives and their deaths in 1862 and 1863. The most striking aspect of the cemetery, besides its magnitude and its solemn beauty, is the number of unknown soldiers buried there. Thirteen thousand of the graves are marked only by numbers on small white stones set nearly flush with the ground.

One quickly remembers that the campaign ended in the summer beneath a scorching Mississippi sun. In his book *The Final Fortress: The Campaign for Vicksburg*, Samuel Carter III quotes a Confederate captain, who described the scene in front of his position two days after one unsuccessful Union assault.

> The stench was unbearable. The sight was horrible. The reeking bodies lay all blackened and swollen, and some with arms extended as if pleading to Heaven for the burial that was denied them by man.

The full explanation for the number of unknown dead is a bit more complex, however. Vicksburg National Cemetery was not established until three years after the campaign ended. The remains reinterred there had been originally buried in scattered locations, record keeping was haphazard, and the initial wooden grave markers were sometimes used by local citizens for firewood.

I stopped on the side of a hill to consider the serenity and beauty of the site, enhanced on this day by the 17,000 American flags flying on the graves. I tried to sort out the emotions that were sweeping over me. It was Memorial Day, and I was the only person in the cemetery. I stopped to pray.

Almost immediately I sensed a powerful positive presence, coupled with an immense feeling of sadness.

Although the setting is majestic, it is unbearably lonely. The soldiers resting at Vicksburg are cut off in death, as in life, from the support of family and community.

Of course, most of the Civil War generation that survived to lead full lives are now also forgotten as individuals. Yet, in a community cemetery, there is activity not present at Vicksburg. There is a continuity of birth and death, of generation following generation. The dead at Vicksburg, like their comrades at Gettysburg, Antietam and other similar sites, are frozen in time.

Had these soldiers lived, they would have been part of a nation roaring with vitality and energy. The generation after the Civil War, for example, saw the most extensive movement of population in our history: a doubling of settled area.

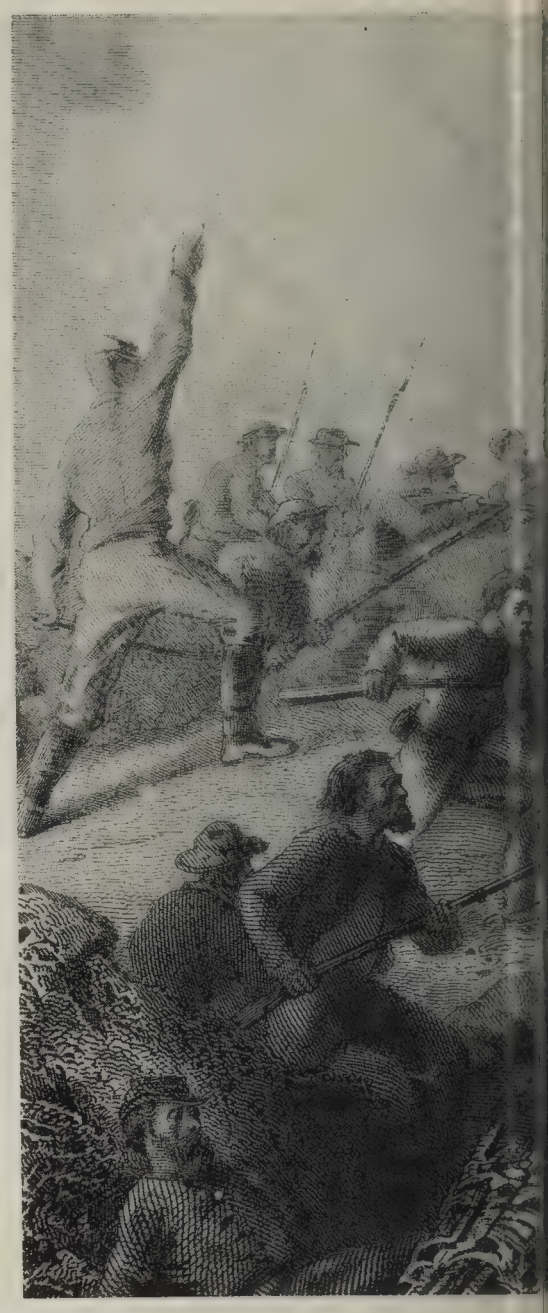
That generation raced to develop vast mineral, agricultural and industrial resources. Railroads began to tie the country together with a web of rails that, by 1900, was six times what it had been in 1865. Education, philosophy and the arts exploded with innovation as America built the institutional base that would carry us to world leadership in the twentieth century.

More significant than the soldiers' collective loss, however, was the accumulated individual tragedy of the loss of life itself and the love which elevates life above its physical reality.

Most tragic, perhaps, were those who died without wives and children, who lost not only their own lives but the chance to participate in the giving of life and to experience the mutual love of a family. For these soldiers, the loss was expanded to children, grandchildren and great-grandchildren who would never be, to the 20 or 30 lives since 1863 that would not be lived.

The human psyche does not tolerate well the experience of prolonged sadness over death; before long, we normally begin to reconcile both individual and collective loss, usually on our own terms. My thoughts turned almost instinctively in two directions.

First, death is a part of life; it is as much a self-evident fact as birth. Philosophy and literature remind us that "we owe God a death" (William Shakespeare, *King Henry IV, Part II*) and that "death



is part and parcel of life" to be regar
"with the understanding and the e
tions, as the inviolable condition of l
(Thomas Mann, *The Magic Mounta*
From a religious perspective, moreo
Christianity tells us not to take phys
death too seriously.

Whether one looks to the philosoph
interpretation of reality or to the mo
ity of religion and "the sure and cer
hope of the Resurrection unto eternal
(The Book of Common Prayer), w
matters is not when we die but how
live; and perhaps how we face deat

Second, these men, like their Presi
and Commander in Chief almost
years later, had died in the hour of t
triumph. They were part of a great
mighty endeavor.

Tactically, Vicksburg was one of
most brilliant campaigns ever fought
American soil. Strategically, it inflict
mortal wound on the Confederacy.
torically, the campaign marked a tur
military history—for better or worse—
ward the industrialization of war.

Morally, Gen. Grant's army cut
the path along which a race would m
toward freedom. Freedom traveled i

LT. COL. STEPHEN D. WESBROOK commands an infantry battalion in West Germany and has served in the office of the U.S. ambassador to NATO, as an instructor at the U.S. Military Academy (USMA) and as a platoon leader in Vietnam. A graduate of the USMA and the Command and General Staff College, he earned a Ph.D. in political science from Ohio State University in 1976.



'Military triumph in itself cannot fully or necessarily impart value to death in war, just as defeat in battle cannot automatically withdraw such value.'

The Bettmann Archive

ysical sense across the South with Union tory, as thousands of former slaves vitated to the areas controlled by Gen. ant's army. In the eyes of many, the ck man began to legitimize his freen with his performance in battle dur- the campaign, which was the first in- ving large numbers of black soldiers. Although men in combat frequently unaware of the significance of the nts of which they are a part, at Vicks- g this was not true. Most who rest in cksburg National Cemetery at least w that they were part of some great ertaking, that the campaign to open Mississippi and split the Confederacy ld be the most important thing they ld ever do in their lives.

here were a number of reasons for awareness. The control of the Mis- ppi had been part of a two-year de- in government and the press on how in the war. Most of the soldiers in Grant's army, moreover, were from Midwest, and the Mississippi was an ral part of their way of life.

deed, one of Gen. Grant's three corps been specifically recruited by Maj. John A. McClernand, a former Democratic congressman from Illinois, as a special force to open the river. Also, because the campaign was so long and because the soldiers received copies of newspapers on a regular basis, soldiers on both sides knew that they were being talked about all over the world.

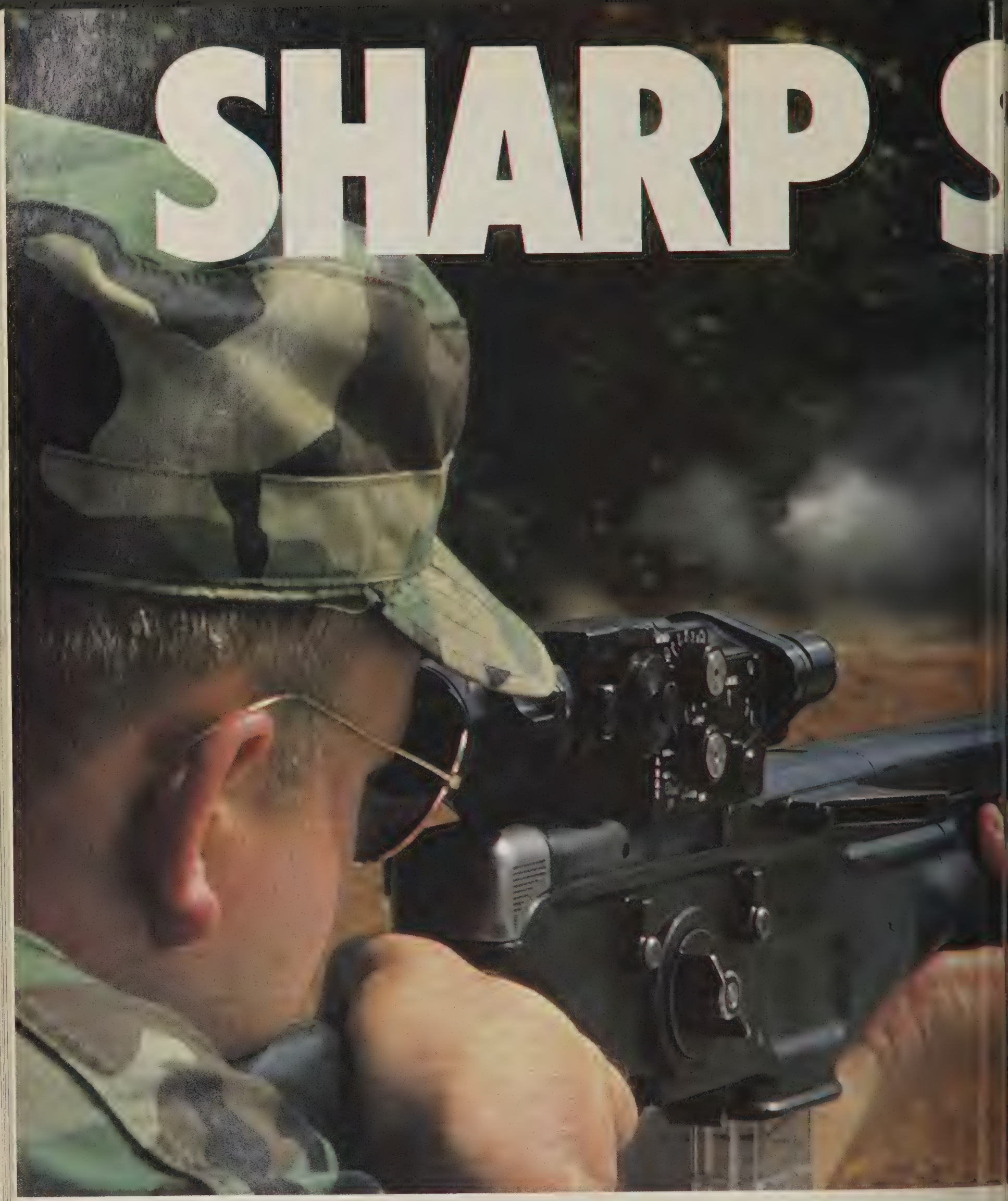
Whatever the source of their awareness, contemporary accounts leave little doubt that most of the soldiers at Vicksburg, particularly in the last three months of the campaign, knew what was at stake. Once the Union forces started moving, morale skyrocketed. On the other side of the hill, once the Union movement became known, a grim determination set in.

The soldiers on both sides in the spring of 1863 could have been no less aware that a war was about to be decided than were the Allied soldiers embarking in England in the spring of 1944 or the Germans who awaited them at the beaches in France. Indeed, the thoughts of the soldiers off the coast of Normandy on the morning of 6 June, 1944, could not have been much different in tone as they rode in their landing craft from those of a sergeant from the 33rd Illinois Infantry on the morning of 29 April, 1863, quoted in *The Final Fortress: The Campaign for Vicksburg:*

> The sun rose throwing an impressive splendor upon the exciting scenes of the early morn. Every boat—transport and barge—lies at the landing, about five miles above Grand Gulf, covered till they are black with troops. Every heart here is full of anxiety and emotion; wondering eyes and eyes not altogether tearless, gaze over and anon upon the Father of Waters where lie the formidable fleet of gunboats and rams, transports and barges, the latter heavily loaded with troops whose courage and valor are sufficient, when combined with that of the rest of this mighty army to redeem this lovely valley of the Mississippi. . . .

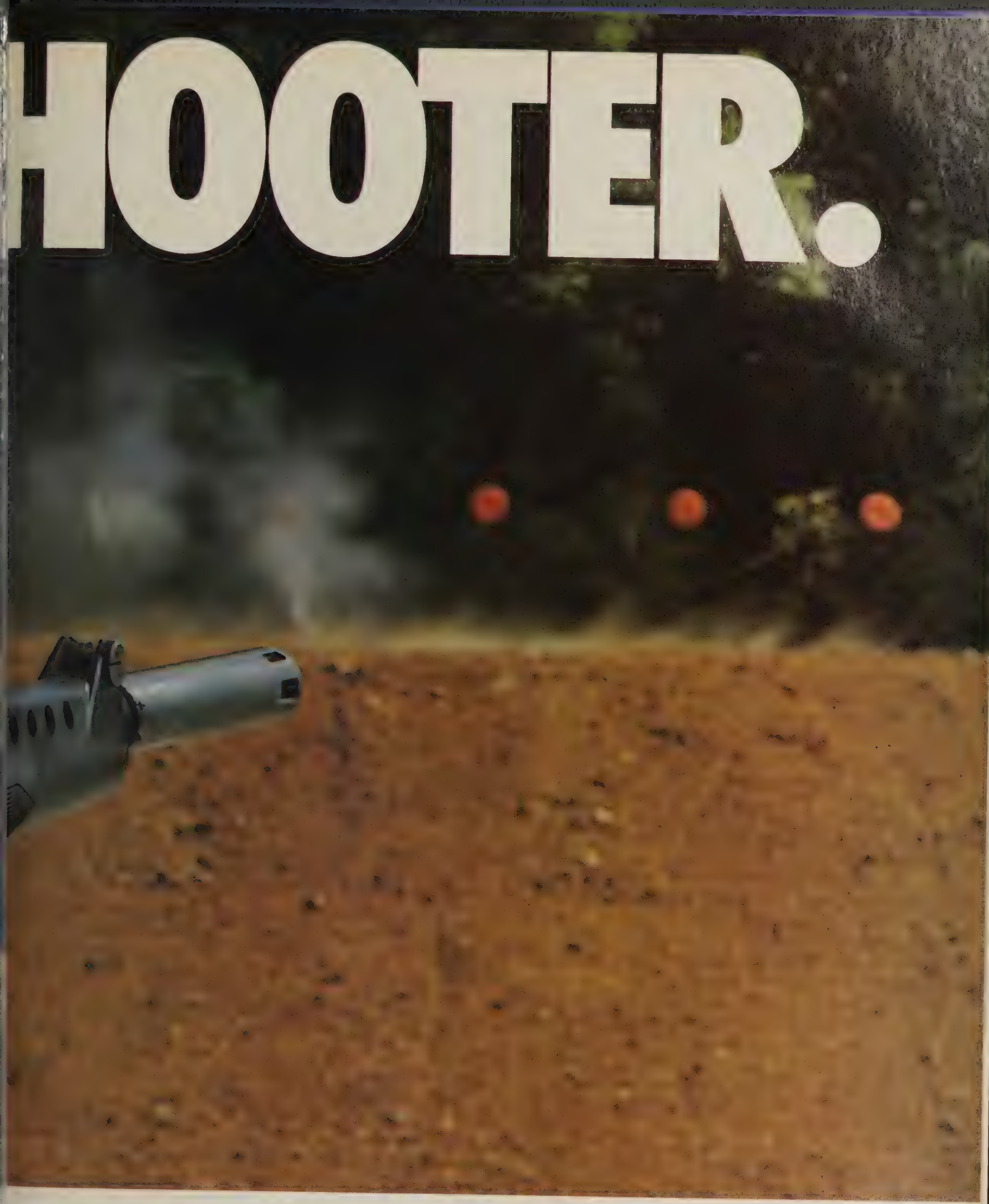
I left the Vicksburg National Military Park and continued my trip south to New Orleans. On this last leg of a long drive, I began to reassess my experience at Vicksburg.

Not surprisingly, I discovered that my initial contemplations on the horrendous loss of life were overly simplistic, probably because I was dealing with a collective whole and the tragedy of death is individual.



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THE SENSIBLE SOLUTION

Many of those who fell along the Mississippi would not, had they survived, have found the rich lives filled with family and love that I ascribed to the collective group. Had they lived, some would have returned home to lost farms, corrupt politics and congested and filthy cities. Others would have been caught up in unforgivable exploitation of child labor, the dehumanizing sweatshops of the East or the near-extermination of a race in the West.

More troubling was the inadequacy of my initial attempt to rationalize these deaths. For openers, the empirical certainty of death does not lessen the tragedy of the death of young men, many torn apart by machines directed by other young men. Moreover, military triumph in itself cannot fully or necessarily impart value to death in war, just as defeat in battle cannot automatically withdraw such value.

Ultimately, humankind turns for consolation over the losses of war to a search for meaning. Thus, if I were to understand my experience at Vicksburg, I needed to examine in more detail how the Union dead at Vicksburg had faced their own deaths and to search for the meaning in those deaths and for the value gained that could sufficiently compensate for so great a loss.

J. Glenn Gray's classic study of the psychology of men in battle, *The Warriors: Reflections on Men in Battle*, provides an excellent analytical framework around which to organize the limited evidence available regarding how the Union dead at Vicksburg had faced their deaths. His empirical observations were made, however, during World War II. One must, consequently, reexamine their validity for an earlier, less technical age.

J. Glenn Gray posits first that most men never really come to grips with the prospect of their own deaths. For these soldiers, "death is a state and condition so foreign and unreal as to be incomprehensible. They reject it with aversion without bringing its reality to the level of consciousness."

In the quiet times, Mr. Gray observed, if forced to consider death at all, soldiers tend to dismiss it as something that happens to somebody else. When in battle, soldiers enter a state of reaction rather than thought. They become caught up in a communal ecstasy in which all sharpness of consciousness is lost, falling back on their training, drill and discipline rather than analytical thought to guide their behavior. This dulled state is often compounded by fatigue and exhaustion.

Undoubtedly, many of the soldiers who died at Vicksburg fell into this category. For a variety of reasons, however, the percentage was probably much less than in modern wars, where only a small percentage of soldiers are in the front line and killing is done at great distances by and to machines in which men just happen to be sitting.

Civil War leaders talked of death with a frankness that offends in our century. For example, Maj. Gen. William T. Sherman is reported to have told his assistant adjutant general in ordering the initial attack on Vicksburg in December 1862: "Tell [Brig. Gen. George W.] Morgan to give the signal for the assault; that we will lose 5,000 men before we take Vicksburg, and we may as well lose them here as anywhere else."

As described by Bruce Catton in *Grant Moves South*, Gen. Grant's subordinate, yet mentor, Brig. Gen. Charles F. Smith, hero at Ft. Donelson, Tenn., rallied Union forces in that battle with words providing an inspirational effect often lost on the modern reader:

> Damn you, gentlemen, I see skulkers. I'll have none here. Come on, you volunteers, come on. This is your chance. You volunteered to be killed for love of your country and now you can be. You are damned volunteers. I am only a soldier and I don't want to be killed, but you came here to be killed and now you can be.

Gen. Smith died not long after that from an infection in a leg which he scraped getting into a boat.

In the Civil War, a greater percentage of soldiers than in modern times was involved directly in the killing, and the killing was done at much closer range. The participants' accounts of battle in all campaigns of the Civil War are so vivid —with references to a horror so great that "no tongue can tell," "men torn all to pieces," "shrieks and groans of the wounded" and "the awful smell of five or six thousand dead bodies decaying over the field"—that it is difficult to believe that anyone could have avoided facing squarely the prospect of his own death.

The soldiers who fought during the Vicksburg campaign recorded such carnage, with the Battle of Champion's Hill—the decisive engagement of the campaign —eliciting the greatest outpouring of anguish.

A Union division commander, who lost a third of his unit there, wrote in his battle report: "I cannot think of this bloody hill without sadness. . . . It was, after the conflict, literally the hill of death *(Grant Moves South)*. A soldier in the 45th Illinois Infantry, quoted in *The Final Fortress: The Campaign for Vicksburg*, wrote:

> All around us lay the dead and dying, amid the groans and cries of the wounded. Our surgeons came up quickly . . . and we began carrying ours and the enemy's wounded to the surgeons. There they lay, the blue and the gray intermingled. . . . With no anesthetic to sooth agony, but, gritting their teeth, they bore the pain of the knife and saw, while arms and legs were being severed from their bodies.

Even so, as J. Glenn Gray posited, many of the men whose bodies lie in Vicksburg National Cemetery probably never did arrive at any position concerning their impending deaths. In part, this is because the majority of soldiers died not in battle but of illness.

Given the many winter months in the camps before the major battles in the late spring, most of those who died of illness never saw a Champion's Hill. A soldier does not expect to die in camp, and by the time he is deathly ill his mind is usually weakened well beyond the point where he is likely to reason out a complex, abstract phenomenon.

The other significant factor here is that most of those soldiers killed in battle during the campaign never saw a Champion's Hill either, until it was too late to think. During the Civil War, well over 100 regiments suffered losses of more than 50 percent in a single battle. In most cases, these regiments found themselves the victims of the deadly combination that haunted Civil War leaders—extremely lethal weapons and primitive means of command and control.

Soldiers throughout the war commented on the confusion and noise of the battlefield, which was frequently a bowl of dust and smoke where no one could see what was going on. When they could, often it was too late, as they were within the killing zone.

Soldiers' comments, drawn from *The Final Fortress: The Campaign for Vicksburg* and Bell I. Wiley's *The Common Soldier of the Civil War*, tend to confirm Mr. Gray's observations that once in battle, it is too late for thought—one only reacts: "With your first shot you become a new man"; "Every human instinct is carried away by a torrent of passion"; "You become cool and deliberate, and watch the effect of bullets . . . and [ca

Soldier

The stars swing down the western steep,
And soon the east will burn with day,
And we shall struggle up from sleep
And sling our packs and march away.

In this brief hour before the dawn
Has struck our bivouac with flame
I think of men whose brows have borne
The iron wreath of deadly fame.

I see the fatal phalanx creep,
Like death, across the world and back,
With eyes that only strive to keep
Bucephalus' immortal track.

I see the legion wheel through Gaul,
The sword and flame on hearth and home,
And all the men who had to fall
That Caesar might be first in Rome.

I see the horde of Genghis Khan
Spread outward like the dawn of day
To trample golden Khorassan
And thunder over fair Cathay.

I see the grizzled grenadier,
The dark dragoon, the gay hussar,
Whose shoulders bore for many a year
Their little emperor's blazing star.

I see these things, still am I slave
When banners flaunt and bugles blow,
Content to fill a soldier's grave
For reasons I shall never know.

BRIGADIER GENERAL C. T. LANHAM

] balls as they rake their murderous
nnels through your ranks . . . with a
ng so callous . . . that your soul seems
l to every sympathizing . . . thought."
lost of the soldiers killed in battle at
sburg would have been dulled by
weariness of long approach marches
n they found themselves faced with
baptism of fire without time to con-
the potential consequences. They
would have moved into that auto-
c state toward which their training
been directed until they were killed
ounded or survived unharmed.
the wounded would likely have been
state of shock, only the unscathed
vors of a major action would have
forced by the carnage of the battle
nsider the prospects of their own
is.

many of the Union soldiers buried at
burg gained no positive relationship
death, there were still some who
Their relationship probably fell, if
in again extrapolate from Mr. Gray's observations, into one of four categories.

For the first group, death was an impersonal force. The soldier who takes this view, according to J. Glenn Gray, considers death very real for others but without power over him until he reaches a predestined place and time. Most soldiers who take this fatalistic view do not presume to know the place and time, but face death bravely because they believe its inevitability is beyond their control.

A smaller subgroup of soldiers convince themselves that they are destined by fate or God to survive the war. This belief carries with it the conviction that they are mysteriously impervious to bullets and shells, that the spot on which they stand is rendered secure by their standing on it. Because such soldiers are free of anxiety, they often perform acts of great heroism. If such soldiers are commanders, they are often inspirational leaders who move their troops to deeds of reckless self-sacrifice.

Bell I. Wiley's analysis of Civil War diaries and letters in *The Common Soldier of the Civil War* tends to confirm that a sense of ill-defined fatalism was widespread:

> Many gained composure by taking the fatalistic view that every man had an appointed time to die and until that time arrived life was secure regardless of the fury of enemy fire. Religiously inclined soldiers tended to interpret successive battle survivals as evidence of God's purpose to see them safely through the war.

It is more difficult to establish the degree to which the soldiers at Vicksburg subscribed to the more fanatical fatalism characterized by an indomitable will born of a faith in one's destiny. Many soldiers during the campaign performed incredible acts of bravery, and a number of the leaders of the Army of the Tennessee, such as the great division commander from Illinois, Maj. Gen. John A. (Black Jack) Logan, won recognition as fearless warriors whose iron nerves and will to victory turned the tide of battle.

Whereas in our century it is fashionable for a Gen. George S. Patton Jr. to proclaim his invincibility based on destiny, in the last it was not, and we can only guess at the beliefs of men like Gen. Logan. One cannot escape the impression, however hazy, that some charismatic leaders have insight into or even power over their own deaths.

Other soldiers form the opposite relationship to death. For them, author Gray writes, "death is an intimate and repugnant enemy before whose threat and presence one can only flee in terror." In war, we refer to such men as cowards. Mr. Gray thought that this relationship to death was more prevalent among soldiers in modern wars than in the past. When reading the accounts of battle in the Civil War, one is hard pressed to disagree. Perhaps cowardice is easier to control or less manifest when men are fighting beside family members, neighbors and friends. No doubt, however, a few who rest at Vicksburg fell into this category, probably—as the saying goes—having first died a thousand deaths.

A third group of soldiers link death to a sense of fulfillment. Such soldiers sacrifice their lives willingly out of love for their country, for a glorified leader or for an ideology or religion. Mr. Gray refers to these men as "otherworldly" soldiers. Such soldiers regard death as an enemy only so long as they have not discovered a purpose in being alive.

When the otherworldly soldier perceives that his chances of surviving an engage-

ment are small, he rarely cringes from his fate. Inwardly, he becomes collected. Believing that his death will serve some greater purpose, or perhaps that death is only a last great obstacle before everlasting life, he is content to repeat "Thy will be done"—or its equivalent—and face death with serenity and cheer. The killers of such soldiers are frequently astounded at how bravely they die and are sometimes shaken by it.

Most of the otherworldly soldiers who fought and died at Vicksburg, and there appear to have been many, based on battlefield accounts of their behavior and on their own correspondence, found their comfort primarily in their patriotism. Religion played a major role to be sure, but in these simpler, patriotic times, God and Country were linked.

As Bell I. Wiley tells us, among Union soldiers who commented in letters and diaries on their individual motivation, "the overwhelming majority indicated that their basic reason for becoming soldiers was to save the Union. They identified the nation of their birth, or their adoption, with liberty, democracy, social justice, and equal opportunity."

A private from Wisconsin, quoted in *The Common Soldier of the Civil War*, wrote after entering the deep South in 1863:

> Home is sweet and friends are dear, but what would they all be to let the country go in ruin. . . . I am contented with my lot. . . . If I live to get back, I shall be proud of the freedom I shall have, and know that I helped to gain that freedom. If I should not get back, it will do them good that do get back.

A 21-year-old Iowa soldier, whose gallantry in numerous campaigns in Tennessee and Mississippi would result in battlefield promotions to the rank of colonel by the end of the war, wrote to his parents in 1861: "I have thought the matter over cooly and have counted the cost and if my life is needed for defense of my Country I am ready to give it up, and do it freely" *(The Common Soldier of the Civil War)*.

A fourth group of soldiers learn to regard death more philosophically, as an anticipated experience among other experiences which they plan to accept, when the time comes, for what it is. Death for them is as much a self-evident fact as birth, and they are accordingly unwilling to sacrifice quality for quantity.

Author Gray identifies two types of such philosophical soldiers, the soldier-adventurer and the more serious professional soldier. The dashing, reckless adventurer is the less complicated of the two. In his carefree philosophy of getting the most out of life, war is an exciting, dangerous game.

The philosophy of the professional soldier, a term defined here as a strong sense of social obligation and duty rather than length of service, is much richer. The professional reasons that death will come when the time is ripe and will, he hopes, afford him the opportunity to show himself worthy and unafraid.

The proper discipline in the event of leaving life is, for him, the same discipline needed to master life itself. Duty is the highest value for the professional, and courage in performance of his duty is a shining ideal. However unpleasant dying might be, death must not be shunned if the interests of duty and honor require it.

Given the educational level and rural background of those who fought at Vicksburg, one suspects that few soldier-adventurers rest in Vicksburg National Cemetery. The number of men, however, who looked upon death soberly and objectively, as a hazard associated with professional duty, is undoubtedly high. From the beginning to the end of the campaign, there is ample evidence of such men.

For example, in the first assault on the Vicksburg fortifications in December 1862, Brig. Gen. George W. Morgan called his brigades into line for Gen. Sherman's attack despite his view that an "entire army could not carry the enemy's position in my front."

An experienced brigade commander, Col. John F. De Courcy, approached Gen. Morgan and said: "General, do I understand that you are about to order an assault?" In response to Gen. Morgan's "Yes; form your brigade," Col. De Courcy replied, "My poor brigade! Your orders will be obeyed, General" *(The Final Fortress: The Campaign for Vicksburg)*.

In the last major assault on the fortifications half a year later, Gen. McClernand—his forces initially having been repulsed—ordered some of his troops to make a second assault in the forlorn hope of retrieving the fortunes of the day.

A war correspondent quoted in *The Final Fortress: The Campaign for Vicksburg* reported that one of Gen. McClernand's colonels initially refused, declaring that he would take the consequences of his disobedience rather than lead his men to certain death. Finally—declaring "Good God! No man can return from this charge alive"—the colonel led h men gallantly forward and fell deac the first fire.

Although history tends to focus c leaders, Civil War correspondence co firms the power of a sense of duty c soldiers of all ranks. An Iowa soldi wrote home, for example, that "I can c my duty, although the danger is great

Moreover, soldiers seemed to talk duty in an unashamed way uncomm today. For example, a colonel of the 20 Ohio Infantry recorded an incident th occurred in the middle of the Vicksbu siege, cited by Stephen E. Ambrose *Struggle for Vicksburg*.

> One day when there was a general bombardment, I was told a soldier wished to see me. Under the canopy of exploding shell I found a youth lying on his back on the ground. He was pale and speechless—there was a crimson hole in his chest. As I knelt by his side, he looked wistfully at me. I said: "We must all die sometime and the man who meets his death in the discharge of duty is happy." A smile flickered on his lips, and I was kneeling beside a corpse.

Such men looked on death soberly a objectively. Even when they recogniz the imminence of their own deaths, th performed as usual to the end. To the death was part of life, a normal haza to be avoided if possible, but never— their actions confirmed—at any cost.

We may expect too much in believi that death in war should have meanir When considering natural or acciden death in peacetime, we think of the val of the accomplishments of people's liv and the way they lived their lives, not the circumstances of their deaths. Nev theless, mankind tends to search for t meaning of death in war.

The cynic would explain this tenden to reconcile and sometimes glorify dea in war as a technique used by those power to manipulate the living. The m analytical explanation is perhaps that those cut down early in life, the way th lived and what they accomplished is t directly to the war. By and large, ho ever, most people are neither cynical r analytical about the meaning of death war; they respond to such death in a g wrenching way that senses, seeks or mands a meaning in so tragic a loss

In November 1864, the War Depa ment informed President Abraham L coln that a Mrs. Bixby of Massachuse had lost five sons to the war. He draf a letter to her, which, after some preli nary remarks, read as follows:

> I feel how weak and fruitless must b any words of mine which should attemp

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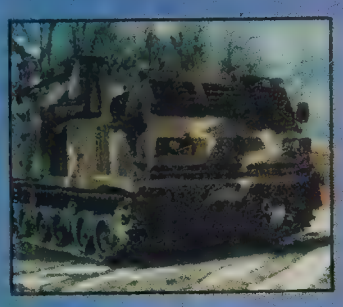
Battlefield Logistics

The Fighting Vehicle Systems Carrier delivers combat service support where it's needed!



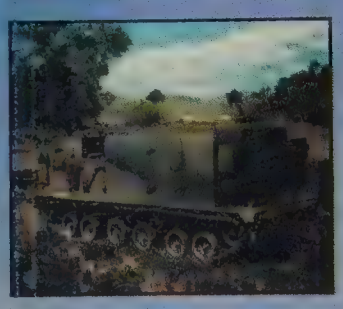
Refuel Forward

Forward Area Armored Logistics System (FAALS) enables refueling of tactical vehicles near the forward line of troops with refueling rates of up to 250 gallons per minute.



Rearm Forward

Forward Area Armored Logistics System (FAALS) permits the transfer of tank ammunition under armor at 3 to 5 rounds per minute.



Repair Forward

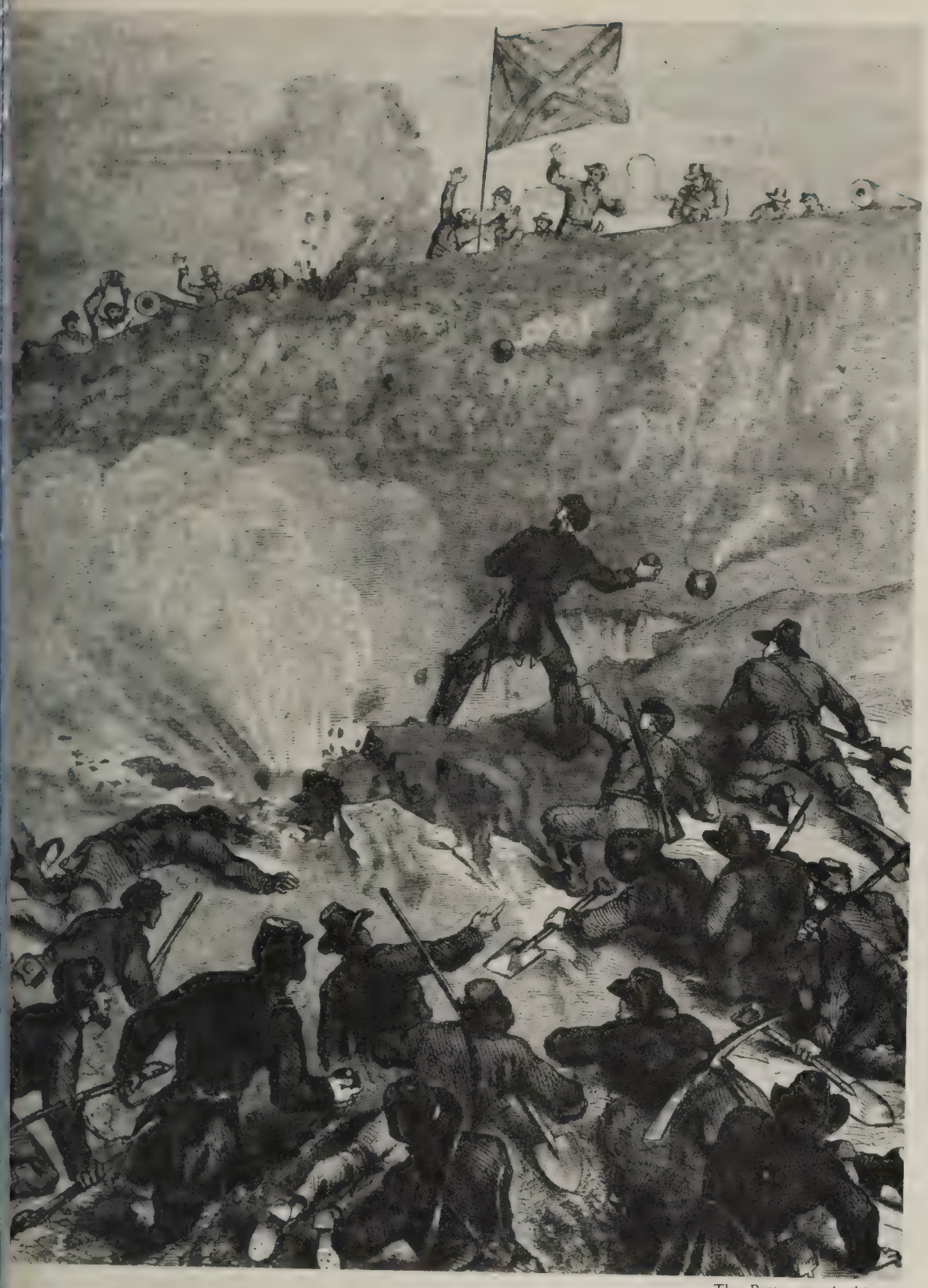
Armored Maintenance Vehicle (AMV) allows repair in the forward area and increases the mission availablity of combat vehicles.



The Fighting Vehicle Systems Carrier, in production, can meet the requirements for battlefield logistics. FMC Corporation can provide the design, engineering, and production necessary to enhance the survivability of logistic systems and increase the protection for soldiers.

For more information, contact the Armored Logistics Vehicle Marketing Manager, FMC Corporation, Ordnance Division, 1105 Coleman Avenue, Box 1201, San Jose, CA 95108, telephone 408/289-3955.

FMC



The Bettmann Archive

beguile you from the grief of a loss so
erwhelming. But I cannot refrain from
ndering to you the consolation that
ay be found in thanks of the Republic
ey died to save. I pray that our heaven-
Father may assuage the anguish of
ur bereavement, and leave you only
e cherished memory of the loved and
st, and the solemn pride that must be
urs to have laid so costly a sacrifice
on the altar of freedom.

ike so much of the inspirational literature on death in battle, President Lincoln's letter focuses ollective meaning. Mrs. Bixby's five had died to save the Republic and rve freedom. We accept this, and it s us feel good.

ere are some hard corners in his age, however, if one transposes it its historical context (recognizing, urse, that there is much in President Lincoln's letter that was left unsaid because it was axiomatic in the Civil War).

Does victory automatically lay a mantle of value over the deaths of all soldiers on the winning side? When one links meaning to collective accomplishment, what does this imply about the meaning of the deaths of soldiers killed in defeat? If one looks only at collective accomplishment, what does this say to the families of men killed in Vietnam?

Obviously, if one is going to turn to collective values to impart meaning, one must also consider goals as well as results. President Lincoln did this. He did not ascribe the value of Mrs. Bixby's sacrifice totally in terms of victory, but rather to a victory in a moral cause to build a better world.

Yet President Lincoln did not have to deal with defeat in righteous causes or victory in unrighteous ones. Which death is more dear, one lost in defeat in a struggle for freedom or one lost in victory for tyranny?

'Most of the soldiers killed in battle at Vicksburg would have . . . faced . . . their baptism of fire without time to consider the potential consequences. They would then have moved into that automatic state toward which their training had been directed . . .'

Had the Confederacy won the war, and in so doing preserved the institution of slavery into the twentieth century, would that have detracted from the meaning of the death of Mrs. Bixby's sons? Would it have increased the meaning of the deaths of Confederate soldiers or actually detracted from them?

A last, related dilemma of focusing on collective accomplishment to ascribe meaning to death in war is the implication that a soldier's death has no meaning in and of itself at the time of his death. Because victory comes (or does not come) after the deaths of most soldiers who are killed in a war, the meaning of a soldier's death would thus totally depend on what the living do—on whether they can carry the fight on to victory and whether victory leads to something of value—not on what he did. Because triumph on the battlefield in the Civil War, and in other wars, cannot express the whole meaning of the war, even the meaning of the deaths of those few individuals who die in the hour of triumph is dependent on the actions of those who follow.

Most people accept the notion that the living have something to do with whether or not soldiers died in vain. As a race, however, we tend to reject the proposition that the soldier has no control over the significance of his death. The collective dimension is necessary, but not sufficient. What is needed is the individual dimension.

At the end of the fourteenth century, John Wycliffe reached a turning point in ecclesiastical history that was to lead to Protestantism. He preached: "For each man that shall be damned shall be damned by his own guilt, and each man that is saved shall be saved by his own merit."

In *A Distant Mirror,* historian Barbara W. Tuchman refers to this as the start of the modern world. John Wycliffe, in the culminating heresy of his age, transferred the notion of salvation from the agency of the church to the individual himself.

Looking into the distant mirror of an age not dissimilar to our own in its calamities, perhaps there is something here for our era. Although the national collectivity, like the agency of the church with regard to salvation, may have a responsibility to provide the soldier something moral worth believing in, increasingly in our age we are coming to recognize the concept that what matters most is what was in the soldier's own mind.

The Western psyche tends to feel warmer toward the defeated Confederate soldier who faced death bravely fighting beside his comrades believing that he was protecting his home and family from a foreign invader than toward the victorious Union soldier who enlisted for a bounty, responded only to imposed discipline and fought as an automaton without any moral commitment.

We feel infinitely less strongly about the death of such a Union soldier than about a comrade who faced death squarely with the knowledge that should he get home, he would be proud of the freedom he helped to gain, and should he not, his death would benefit those who did. Yet both Union soldiers may have contributed equally to the collective battlefield victory that eventually led to a moral outcome.

Not only is the notion of individual belief thus critical in the search for meaning, but so is the content of that belief. In *The Final Fortress: The Campaign for Vicksburg*, Samuel Carter III writes of the unknown Union dead in the Vicksburg National Cemetery: "All that is known about them, all that really need be known about them, is that they died for the greatest of all causes, something they believed in."

This has a nice ring to it; however, such a proposition is hard to support logically and serves to highlight the obvious notion that simply believing is not sufficient. If the individual is to contribute to the moral significance of his own death, then it is not enough that he believes in something. That something must also reflect moral value itself.

In sum, the individual soldier probably bears the bulk of the responsibility for establishing the meaning of his own death. He need not confront consciously the prospect of his death. If he is not at least vaguely aware, however, that he has put himself in harm's way because of something moral that he believes in—protection of home and family, duty, God and country—then his death can have no more meaning than if he were hit by a car or if he died of cancer.

If any man searched for the meaning of death in war, it was President Lincoln. If there is a single statement that captures the essence of what imparts such meaning, it is the Gettysburg Address. The power of President Lincoln's words stem now, as on 19 November, 1863, from the fact that he hit on what was already in men's hearts.

In a two-minute speech, President Lincoln tapped the formula for what our souls tell us is sufficient to compensate for the tragedy of death in war, of what tips the scales to produce a positive result.

President Lincoln spoke not of men being killed, but of men giving their lives willingly for something that they thought worth dying for, something—such as freedom and equality—that was inherently good and moral. He spoke of collective victory, not victory as an end but rather a means to advance the nation and mankind in general toward greater good.

President Lincoln also reminded the living, however, that to some degree the meaning of death in war depends on their subsequent actions and ability to see the war through to victory and to dedicate themselves to turning that victory to something that might justify all that the war had cost.

Rethinking my experience at Vicksburg, I remain saddened by the stupendous loss of life, as well as of the love and children that would never be. It may be, as President Theodore Roosevelt eloquently expressed it, that "death is always and under all circumstances a tragedy, for if it is not, then it means that life itself has become one."

Some circumstances, however, seem worse than others. At Vicksburg in 1862 and 1863, it was young men mostly who died, torn to pieces by shot and shell or consumed by sickness far from the support of those they loved, with little medicine and no relief.

A good bit of the popular literature of war refers to the glory of the battlefield, at least for the victors. Yet few such thoughts are set down by soldiers themselves, who, if they feel anything positive at all, tend to feel pride and admiration at what some men are willing to sacrifice for others.

Soldiers cannot escape the reality, so hauntingly captured by the Duke of Wellington after Waterloo: "Nothing except a battle lost can be half so melancholy as a battle won." Hanging over Vicksbur however, is a powerful presence of rig ness that says "this was worthwhile."

In the four years since I stood at V ck burg, I have been on a number of batt fields, stretched across time and oc ea and nations. I have sensed the same po er of purpose and rightness in some pla and not others.

It is strong in the elegant American m itary cemetery in Luxembourg, its pre ence flowing from the graves to be echo off the hills of the Ardennes to the nort where so many died, and to be strengt ened by the hearts of the people of Lu embourg and Belgium who know wh was lost and what was gained.

That feeling of rightness is hard to fi standing on top of a crypt in easte France containing the bones of hundre of thousands of unknown soldiers kill at Verdun. There, less than 70 years ag Western peoples—who are today bou by common values and cooperative go into the great Western alliance—slaug tered each other in one of the costlie battles in history in a war without pu pose and without real victory.

The presence is found as one stands the cemetery at West Point or in a sm midwestern town looking at the gra of friends lost in Vietnam, but only part and then only after shaking off t sadness of shattered lives and collecti failure. It is found by remembering t soldiers themselves and the meaning th imparted to their own deaths—withc the help from the living who failed th —by their belief in their country, th comrades and their responsibilities.

At Vicksburg, however, the presence certain and strong. The reasons for t become clearer the more one knows the soldiers whose remains are buri there. The vast majority placed the selves in mortal danger voluntarily b cause of things they believed in, thir that have been valued by men for ag They contributed to the collective achie ment of a cause that was similarly m ally grounded—the preservation and e durance of "a new nation, conceived Liberty, and dedicated to the propositi that all men are created equal."

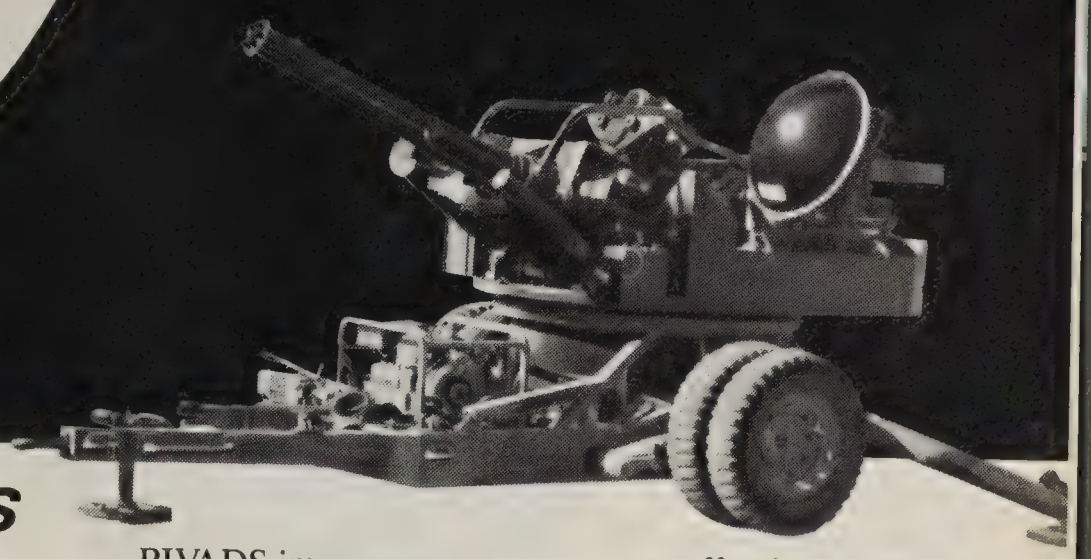
Those who moved beyond Vicksbu in time and space completed "the unf ished work which they who fought so nobly advanced," ensuring that t dead would "not have died in vain" a that the nation would "have a new bi of freedom." Somehow, anything less, their time or our own, does not se adequate.

nnovation

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These improvements add up to more accurate and more effective target tracking at all crossing ranges. And they greatly reduce the time it takes to train gunners. That's why the U.S. Army has exercised an option to purchase PIVADS modification kits.

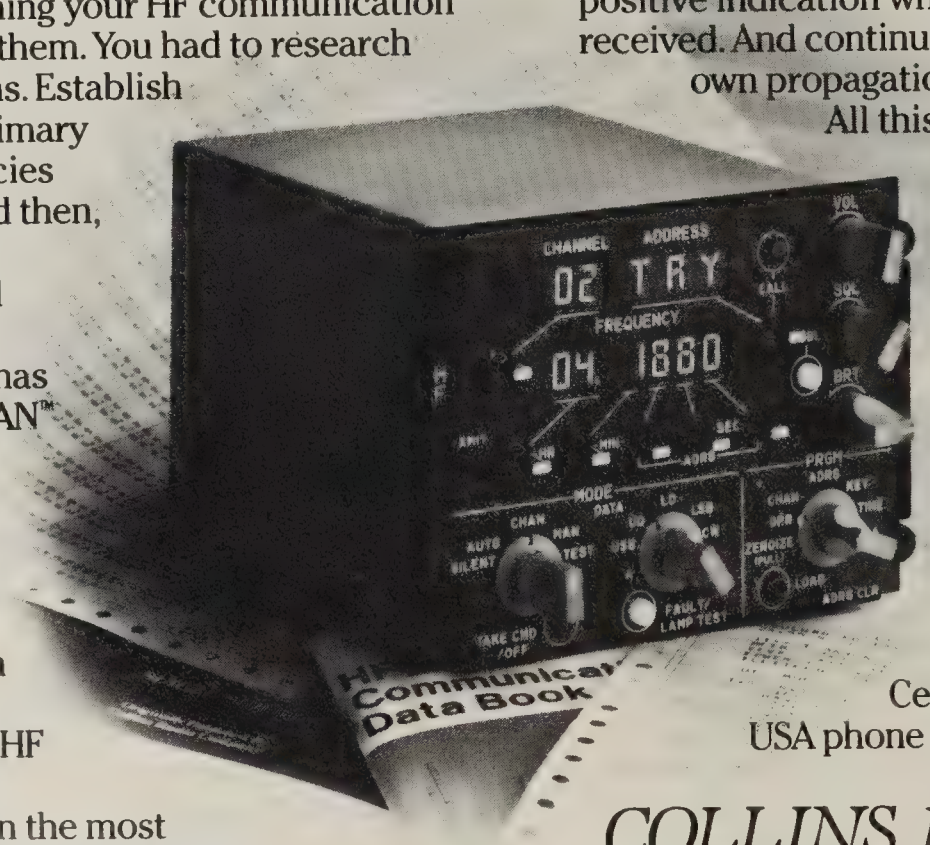
PIVADS is your most cost-effective answer to an upgraded Vulcan air defense program. For further information write: Director of New Business Development, Lockheed Electronics Company, Inc., 1501 U.S. Highway 22, Plainfield, New Jersey 07061. Or call (201) 757-1600; TWX 710-997-9541.

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DEFENSE ELECTRONICS OPERATIONS

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...where science gets down to business

The Forward Edge

Y MAJ. GEN. A. S. NEWMAN

ıe Fine Art)f Listening Pays Off

"Your notebook is your memory's best friend" was penciled on a slip of paper in my shoebox file. That reminder, on a page from one of my active-duty notebooks, was mixed with as-ted other *aide-memoires* in that now-disintegrating tainer. Below that one-liner was this one: "You 't remember what you do not hear." It was that ement of the obvious which sparked this discussion ut the importance of listening.

he distinctive place of listening in military life was dramatized for me by a little happening in the ca- mess hall at the U.S. Military Academy. I was not itness but heard about it. An upperclassman at one e rapped with a spoon for attention, and plebes at foot of the table looked his way. He then com-ıded, "Sound off, Mr. Brown!"

he previously trained plebe then began his act in ud, anguished voice with appropriate stopping, ing and hearing gestures:

op! Look! And listen well!
three-month slug is worse than hell, sir!

anslation: The plebe had been caught in some trans-sion or other—after being warned orally—and end-vith a "three-month slug on the area." This meant for three months (every Wednesday, Saturday and lay afternoon) he walked punishment tours in the of the barracks, wearing dress uniform and white es.

the upperclassman's little organized playlet was ned to emphasize and publicize the fact that the e had been warned of danger and heard the words casual sort of way, but had not *listened* closely gh to understand the reality of the warning.

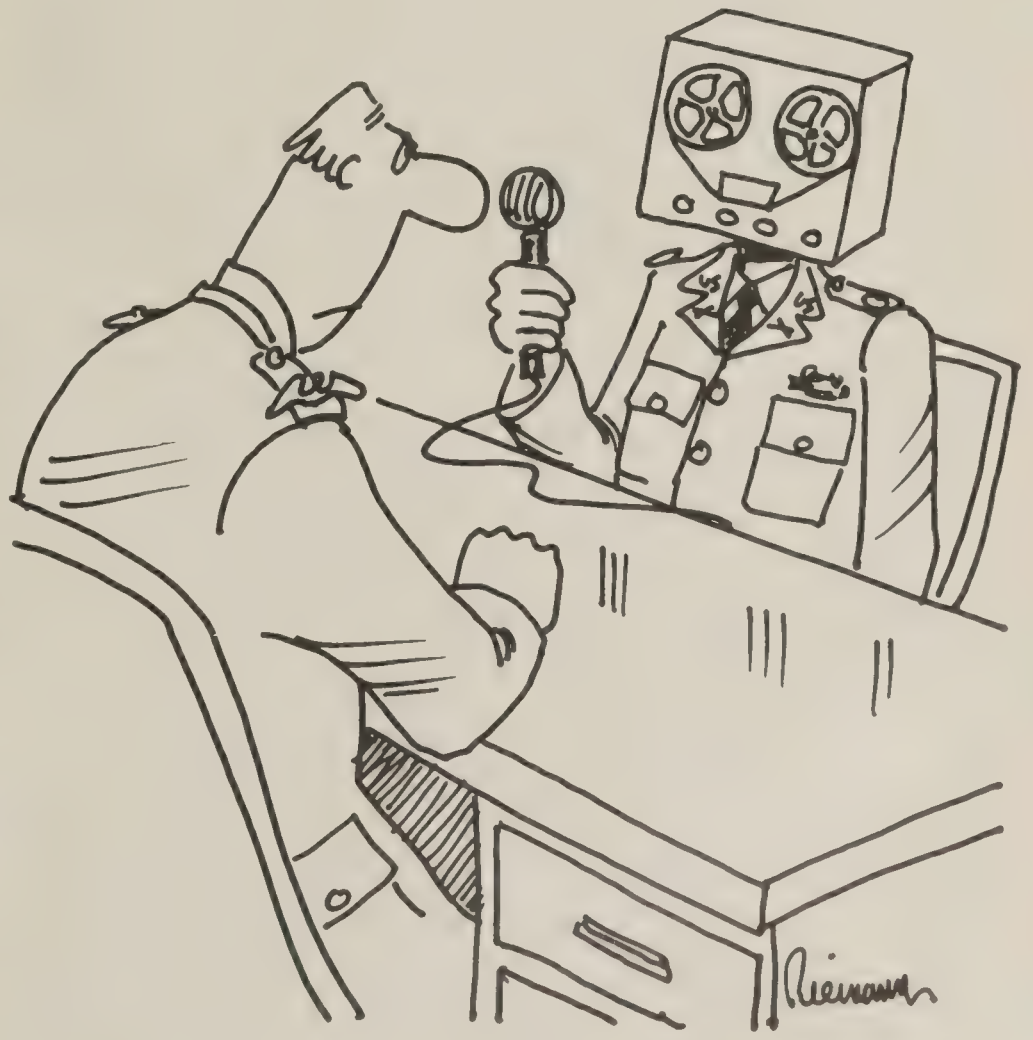
l. Joseph A. McGowan, U.S. Army Reserve, a ni reader of "The Forward Edge," wrote me about le happening he witnessed at the Airborne school. his jump, he remained in place and observed the hute of the first man out of the next plane devel-ıto a streamer. The loudspeaker immediately or-, "Number One! Pull your reserve—pull your re-!"—which he finally did—just before hitting the ıd.

ıen asked why he delayed pulling his reserve , he said that he had followed instructions exact-fter jumping, he counted "one thousand, two and, three thousand" and then realized he had a ner. So he placed his hand back on the reserve and counted "one thousand, two thousand, three thousand" *again* before pulling his reserve.

The moral of this footnote to Airborne history is that if you do not listen closely to instructions, you had better be a fast counter. In this case, the failure to listen carefully nearly cost that man his life. Next time, in a different situation, it could cost the lives of others.

There is no end to the diversity of situations where it is not enough to hear the words. You must also listen to understand the full meaning of what you hear. That is why it is routine procedure after issuing oral orders to ask, "Any questions?"

I encountered another facet to listening soon after reporting as chief of staff, 11th Airborne Division. When I sent for the adjutant general, he arrived with shorthand notebook in hand and said, "Go ahead and talk, Colonel. I will take down your instructions in shorthand."



That gave me pause. So I said, "No, I do not want that. Take notes as may be necessary, but listen and understand what I say. You can then ask questions now, instead of having to come back again later."

What I did not tell him was, "As you take shorthand, you are just hearing words and recording them —but not listening. I want your attention focused on the meaning, so you and I can discuss any points not clear." In other words, I wanted a listening and thinking staff officer—not a tape recorder.

An interesting demonstration of variations in the ability to listen was the way visiting lecturers answered questions at the Armed Forces Information School, the Armed Forces Staff College and the National War College. These speakers were all experts in their fields, many of them nationally known.

The most outstanding was Gen. Maxwell D. Taylor, who, as the chief of staff, U.S. Army, was a guest speaker at the Armed Forces Staff College when I was the deputy commandant there. He would stand quietly, looking directly at the questioner, and then pause briefly before beginning his answer. As a result, his answers were brief, clear and to the point. I remember particularly his answer to one long, wordy question; after thinking a while, he just said, "No." This was exactly the right answer.

After another question, however, he paused longer than usual. Then he came up with his own question: "Now, you really do not expect me to try to answer that question, do you?" The class broke into applause because the question had come from a member of another service and was on the curveball side. Gen. Taylor had listened carefully, noted the curve involved and, smiling, refused to swing.

At all of these interservice schools and colleges, an indispensable part of the curriculum was the variety and competence of guest speakers. There were no written handouts and no tests based on what the speakers had said. What each student gained from the guest speaker program depended on his capacity to listen, assimilate, evaluate and store in his memory selected ideas for future use. Certainly, the ability to listen and remember was crucial to the value of the course.

When I was a student in the 13th General Staff class at Ft. Leavenworth, Kan. (a quickie wartime class in early 1943), one of the first guideline papers issued was a brief study on how to handle the voluminous reading material given to us. Nothing was said, however, about how to listen to the lectures; nor were there any tips about how to remember what we heard in the lecture halls, so I will make a modest suggestion in the final comments below.

I have touched previously on the method involved in how to remember ("Good Memory Is an Asset in Army," ARMY, August 1971). Since that was nearly 15 years ago, the following extract will assist in relating memory to the problem of how to listen effectively:

> To paraphrase the famous comment often attributed to Mark Twain about the weather: Many people complain about a bad memory, but they never do anything about it. Since a good memory is a fine professional asset, it is worth investigating to see whether or not there is any way to improve a poor one.
>
> When I was a second lieutenant in Manila in 1929, an item in the local paper reported "one of the seven great[est] memory experts in the world" had arrived in to[wn] and would give classes on how "you, too, can develo[p] a good memory." One class was scheduled for the Amer[i]ican-European YMCA gymnasium at 7:30 the followin[g] night. I was living in the Y, so I decided to get the prom[ised] good memory, for a price of five pesos ($2.50 U.S.).
>
> At 7:30 next evening quite a group of us were seate[d] on folding chairs in the Y gym—but no memory exper[t]. After waiting 15 minutes, somebody called the expert['s] hotel and learned that he had forgotten about the meet[ing], but would be right over.
>
> Of course other residents of the Y gave us a jumb[o] size heehaw about our $2.50 donation. But, lookin[g] back now over 42 years, I can say that was the bigges[t] money bargain of my life.
>
> He gave us three principles: (1) You must want to im[prove] your memory, and make a continuing effort to d[o] so. (2) Nobody can remember everything he sees, hear[s] or reads, so be selective; focus your mind on things yo[u] want to remember. (3) In focusing your mind, think [of] how you can relate what you want to remember to othe[r] things.

The following example illustrates the "relate pri[n]ple." My younger daughter's ZIP code is 01944—[i.e.,] 1944 was the year of the Leyte invasion of the Phi[l]pines, in which I participated.

Some comments are:

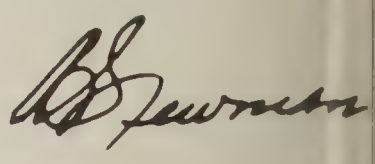
■ The three principles listed above for improv[ing] memory also apply to improving listening capacity, [e]pecially the requirement to "make a continuing effo[rt]." Furthermore, they apply with equal force to rou[tine] military conversations, as well as to selecting idea[s] remember from guest speaker programs.

■ Instead of trying to remember in detail leng[thy] oral statements—by individuals or guest speakers—[the] effort should be to focus your mind on following [the] speaker's train of thought and thus isolating idea[s] consequence to remember.

■ When I assumed command of the 82nd Airbo[rne] Division (briefly, in the fall of 1953), the comp[any] commanders were young and inexperienced. So I [as]sembled all the officers in the theater for a one-[hour] talk by me on "the technique of command." Before [be]ginning the talk, I said: "Please do not take notes; [a] copy of my speaker's notes outline will be given [to] each of you as you leave. This is to free you to li[sten] closely to what I say, following my line of thought[s] ideas to remember about command."

■ If I were starting over again, I would keep a "[mi]ten file" for talks and lectures in condensed form. [A] brief summary of each speaker's *ideas* would go [on a] single page in a loose-leaf book. In due course, the [re]sult would be a fine collection of varied ideas for re[f]ence. Such a system would also be a spur to m[ore] careful listening during the talks.

Why not try it?



se of Civilian Health Care to Expand

In an effort to improve the wartime readiness of its medical cilities, the Department of Defense (DoD) plans to shift a eater portion of the dependent and retiree patient workload the civilian health care community.

Secretary of Defense Caspar W. Weinberger has noted that arly three quarters of the workload at military medical facil-es is now devoted to military families and retirees, most of iom receive general nonemergency care, while the armed ces are "seriously short of surgeons, nurses, psychiatrists d anesthesiologists" needed in time of war. Secretary Wein-ger has directed the assistant secretary of defense for health airs, Dr. William Mayer, to seek out civilian medical re-irces which meet the needs and standards of DoD.

Among the possible civilian health care programs to be de-oped for military dependents and retirees, Mr. Weinberger mentioned enrollment in health maintenance organizations, y-access outpatient care centers, preferred provider groups d fixed-care contracts whereby civilian insurers pay for the D beneficiary's health care.

The Bulletin Board

With the increase in the availability of such programs over past few years and the rising competition for patients ong health care providers as civilian hospital beds go unoc-ied, DoD officials are confident that more efficient and less ly quality nonemergency care can be found for its non-ve-duty members in the civilian community.

substantial number of dependents and retirees presently ive most of their medical treatment at civilian facilities, us-the Civilian Health and Medical Program of the Uniformed vices (CHAMPUS).

form Policy Update

rmy Uniform Board officials have announced a number of orm wear policy changes:

The olive green utility cap is no longer authorized for r. The battle dress uniform (BDU) cap will be worn with atigue uniforms unless organizational headgear has been orized.

Distinctive unit insignia (DUI) may not be worn on the green field jacket, dress blue uniforms of enlisted mem-and dress white uniforms. The DUI is authorized for wear rganizationally issued blue uniforms and other special rms worn by enlisted members of bands, honor guards other ceremonial units when it has been approved by the commander.

Commanders of major commands (MACOMs) no long-ave the authority to approve the wearing of the local es.

Utility and organizational uniforms may not be worn ost except while in transit between the soldier's home and station. Exceptions to this policy may be authorized by llation commanders in the continental United States, MA-1 commanders overseas and state adjutant generals for Army National Guard.

Both smooth and matted nameplates may be worn on service, dress, hospital and food service uniforms.

- Conservative nonmilitary-issue prescription eyeglasses may be worn with the Army uniform. While such wear had been allowed in the past, it had not been formally authorized.
- Conservative sunglasses, both prescription and nonprescription, may be worn in garrison, except while in formation.

The above changes went into effect on 1 October.

Hardship Tour Travel Benefit Sought

Military families stationed overseas at locations in 57 countries considered hardship assignments will be entitled to travel free on a commercial airline to one of five designated destinations if Congress approves a $1.3 million Pentagon request to fund environmental morale leave (EML) travel.

An earlier version of the EML request covering military personnel and dependents serving in 84 countries was proposed to Congress a few years ago but was rejected when it was learned that among the hardship tours listed were popular vacation spots such as Bermuda and Jamaica. The current criteria for qualifying countries identifies them as "truly isolated, austere or environmentally depressed" and the list is composed almost exclusively of developing and communist countries.

Under the DoD (Department of Defense) proposal, service members and command-sponsored dependents would be entitled to travel round trip at government expense, once per two-year tour and twice per three-year tour. The five designated leave destinations, selected based on proximity to the applicable countries and availability of recreational facilities, are Rhein-Main Air Base, West Germany; New York, N.Y.; Miami, Fla.; Hong Kong; and Kuala Lumpur, Malaysia. Those who qualify for EML-paid travel may only go to the destination established for the region of their assignment.

Assignment to only one location—Argentia, Canada—would provide for travel to New York City. Military families assigned to eight countries in Latin America would be authorized travel to Miami. Service members and their families stationed in the People's Republic of China would be provided free transportation to Kuala Lumpur. Hong Kong is the proposed vacation port for personnel assigned to Burma, Indonesia, Malaysia, Nepal, Sri Lanka and Thailand.

Rhein-Main Air Base would be the destination for service members and their dependents in 41 nations in the Pacific, Central or European Commands.

Free Stripes, Patches Being Issued

The Army has begun distributing rank insignia, service stripes, unit patches and achievement badges to enlisted soldiers at no cost through their company supply rooms.

In the past, soldiers were generally given one set of rank insignia upon promotion and were issued unit patches on an as available basis from the company supply room, but otherwise they had to buy the items at Army clothing sales stores. The new policy, announced by the Troop Support Agency, Ft. Lee, Va., became effective on 1 October.

A change in the Army's funding policy allowed these uniform items to be added to the unit organizational inventory, the list from which free-issue items are distributed to active-duty, Army Reserve and Army National Guard soldiers at the unit level.

In addition to providing the insignia and badges, post commanders must also provide related free sewing service for enlisted soldiers, which usually involves contracting the work out to a local private business.

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wedish AT4 Antitank Weapon elected to Succeed M72 LAW

fter a year of developmental and op- ional tests, the Army has decided to pt the Swedish 84-mm AT4 dispos- recoilless gun as the long-sought suc- or to the M72-series light antitank pon (LAW). The decision was not xpected, the AT4 having shown well 1983 "shootoff" and subsequent tests, was somewhat delayed, reportedly at urging of the Norwegian firm of A/S

News Call

foss, which had offered an improved ion of the M72 66-mm rocket launch- he M72E4. The Norwegian weapon, ever, would not have been ready for ll-scale testing cycle before January. ne shoulder-fired AT4 was designed developed by Sweden's FFV Ordnance is marketed here by the Defense Sys- Division of Honeywell Inc. The and structure of Army AT4 pur- es is unknown at this writing; Hon- ll had offered contract options for different rates of production, the mum being 50,000 units in the first and 375,000 over three years, at h the unit cost would be $678. The 1986 defense authorization bill con- $41.6 million for Army and Marine s AT4 procurement.

e AT4 entered the LAW replacement re in 1982, when Congress mandat- mparative tests of foreign alterna- to the troubled 70-mm Viper rocket her, then the service's preferred LAW ssor, developed by the Army Mis- Command and General Dynamics. Swedish weapon won the resulting competition against the Viper and other rocket launchers, the British -80 and Raufoss's LAW-750, an in- improved M72. The Army then or- 1,000 AT4s for engineering tests, were made early this year at Aber- Proving Ground, Md., and for field g, in which 482 rounds were fired ldiers and Marines at Ft. Benning, last summer.

er had a long and difficult gestation d, with attendant cost increases, but actually killed it was the growing usibility of providing the capability feat the frontal armor of modern battle tanks in an M72-sized pack- .75 pounds, 25.8 inches long in the mode).

shaped-charge warheads such as yed in these weapons, armor pene- tration is primarily a function of warhead diameter multiplied by a factor of five to six; and warhead diameter controls weight and bulk, unless the designer goes to a spigot-launch configuration in which range and accuracy are seriously degraded.

The basic M72A2 has long since been countered by improvements in tank armor and even its performance against lightly armored vehicles is inconsistent. The slightly larger Viper was considerably better, and its heavier, more powerful rocket motor provided better effective range, a flatter trajectory and lower flight time—all major advantages.

At 8.9 pounds, however, Viper weight was nearly double that of LAW and more than ten percent above the design goal of eight pounds, this itself being a compromise figure (the infantry had wanted a weapon of no more than seven pounds). Armor penetration was below that required to defeat the frontal arrays of the newer Soviet tanks that appeared during Viper's development; but this was acceptable, as long as the Army was thinking of a LAW-type weapon issued on a very large scale as a last-ditch means of defense against tanks for support troops and nonspecialist infantrymen.

But requirements changed from "last-ditch" to "front line" as the Army began to develop the light infantry division. These formations cannot carry anything like the density of heavy antitank weapons—tank guns, precision-guided artillery, Apache attack helicopters, heavy TOW missiles in vehicles—found in mechanized infantry and armored divisions; only these provide the "screen" behind which last-ditch weapons have some utility. The Marine Corps has also insisted that any LAW replacement be able to defeat the most modern tanks head-on.

In the light divisions, the AT4 will be a primary antitank weapon, so its weight and size (14 pounds, 39 inches long) are less critical. Nevertheless, Honeywell and FFV have embarked on a product-improvement program that will reduce weight and bulk.

Also in prospect is an improved antiarmor warhead, using a heavy-metal shaped-charge liner of hemispherical configuration, as opposed to the conical-shaped aluminum liner of the basic AT4 warhead. The basic warhead is credited with the ability to penetrate about 450 millimeters of steel armor, but this is still marginal against the glacis plate of the latest Soviet T-72 and T-80 tanks, which is composed of 200 millimeters of special compound armor inclined at 70 degrees: at this angle of incidence, the frontal array is the equivalent of 500 to 600 millimeters of rolled, homogeneous steel armor plate. The basic warhead, however, is said to have heightened effects (spalling, flash, overpressure and the ignition of even cold diesel fuel) behind the protection of lighter vehicles, such as armored personnel carriers.

The AT4 projectile is fired from a glass-reinforced plastic tube and the weapon is issued as a complete round, with firing mechanism, sights, carrying sling and protective covers. The storage life is 20 years. The operating principle is similar to FFV's 84-mm Carl Gustav recoilless gun, in which a plastic disc is blown out of the head of the light alloy cartridge case to counteract normal gun recoil.

The AT4's accuracy is less affected than rocket launchers by ambient conditions, and testing has shown dispersion at 300 meters to be no more than one mil on the average (with maximum vertical dispersion of 1.4 mils). Measured against a target sized to represent the Soviet BMP infantry fighting vehicle, hit probability at 300 meters is a nominal 0.7, although more recent testing has shown this to be closer to 0.8. Hit probability at 500 meters is good enough to fix this as the maximum effective range.

Muzzle velocity of the AT4 round is about 950 feet per second, so that time of flight to an average engagement range of 250 meters is less than a second, thus reducing the gunner's exposure time. From the carry mode, the weapon can be made ready to fire in less than 10 seconds.

The triple-post front sight is sized to bracket a BMP-sized target at average ranges, coupled with the peephole rear sight. This arrangement gives a sight picture similar to that of the M16 rifle, a feature inspired by the Army in the interests of facilitating training.

Reserve Roundout Unit Named. The Army Reserve's 205th Infantry Brigade has been selected as the roundout unit for the new 6th Infantry Division (Light), which is to be formed in Alaska. The 205th is the first Army Reserve brigade to serve as a roundout unit.

The active Army's 172nd Infantry Brigade, stationed at Ft. Richardson, Alaska, was previously designated to form the base of the new division. The 205th, headquartered at Ft. Snelling, Minn., was a natural choice for the 6th Infantry Division roundout role based on its cold-weather capabilities and an existing relationship with the 172nd. Working closely with the 172nd Brigade, the 205th trains in Alaska on a regular basis and has the cold-weather equipment required for conducting exercises in the region.

Units of the 205th which will convert

GENERAL OFFICER CHANGES



Maj. Gen. R.D. Hammond from DCSDEA, AMC, to DNCD, ODCSOPS/CG, USANCA.



Maj. Gen. J.W. van Loben Sels from CG, USAED-E, to CG, USATC(E), FLWM.

Brigadier Generals: **R.M. Bunker** from CG, USAED-PO, to DOM, OCS; **W.W. Crouch** from Cdr., 2nd Arm. Cav. Rgmt., NUWG, to CS, VII Corps, USAREUR; **J.P. Dreska** from DCG, 2nd SUPCOM(C), NWG, to CG, 2nd SUPCOM(C), NWG; **M.L. Ferguson** from DCG/CS, USA Japan, to DCS, DEA, AMC; **P.E. Funk** from Cdr., 194th Arm. Bde., FKK, to AComdt, USAARMS, FKK; **P.L. Greenberg** from OPM, AMLOG, AMCCOM, DNJ, to DCG-P&R, AMCCOM, RII; **R.A. Greenwalt** from DAA, USSR, to DACSI, OACSI; **M.E. Hedberg** from DTAG/EDMPSA, to TAG; **P.J. Kelly** from Cdr., USAEDist.-MA, to DDCW, OCE; **P.W. Lash** from ADC(Ops), 24th Inf. Div. (Mech), to CG, 1st ROTC Region; **S.A. Leffler** from Cdr., 7th Sig. Bde., SWG, to DA&D, OACSIM; **F.F. Marty** from CS, USACAC, FLK, to CG, V Corps Art., USAREUR; **W.C. Page Jr.** from CAD, ODCSOPS, FORSCOM, to ADCSOPS(POM), FORSCOM; **Joseph Pratt** from CS, USATC(E), FLWM, to CG, USAED-NC; **J.W. Ray** from CG, USAED-ME(Fwd), to CG, USAED-E; **R.H. Ryan** from DDPR, DMA, to CG, USAED-PO; **J.W. Shufelt** from DACSI, OACSI, to VDMO, DIA; **C.E. St. Arnaud** from CS, USADSC, to Cdr., DCASR-NY, NY; **T.H. Tait** from CG, 2nd Arm. Div. (Fwd), to D-Tng, ODCSOPS; **Theodore Vander Els** from DCDD, USAES, FBV, to DDPR, DMA; **J.S. White** from Cdr., 1st Bde., 25th Inf. Div., to CG, 2nd ROTC Region.

■ ***DCSDEA**—Deputy Chief of Staff for Development, Engineering and Acquisition; **DNCD**—Director, Nuclear Chemical Directorate; **USANCA**—U.S. Army Nuclear and Chemical Agency; **USAED-E**—U.S. Army Engineering Division, Europe; **USATC(E), FLWM**—U.S. Army Training Center-Engineer, Ft. Leonard Wood, Mo.; **PO**—Pacific Ocean; **DOM**—Director of Management; **NUWG**—Nürnberg, West Germany; **NWG**—Nellingen, West Germany; **FKK**—Ft. Knox, Ky.; **USAARMS**—U.S. Army Armor School; **OPM, AMLOG, AMCCOM, DNJ**—Office of the Project Manager, Ammunitions and Logistics, U.S. Army Armament, Munitions and Chemical Command, Dover, N.J.; **P&R**—Procurement and Readiness; **RII**—Rock Island, Ill.; **DAA**—Defense and Army Attaché; **DACSI**—Deputy Assistant Chief of Staff for Intelligence; **DTAG/EDMPSA**—Deputy The Adjutant General/Executive Director, Military Postal Service Agency; **USAEDist.-MA**—U.S. Army Engineer District, Mobile, Ala.; **DDCW, OCE**—Deputy Director of Civil Works, Office of the Chief of Engineers; **SWG**—Sandhofen, West Germany; **DA&D, OACSIM**—Director of Architecture and Design, Office of the Assistant Chief of Staff for Information Management; **USACAC, FLK**—U.S. Army Combined Arms Center, Ft. Leavenworth, Kan.; **CAD**—Chief, Aviation Division; **(POM)**—(Plans, Operations and Mobilization); **NC**—North Central; **ME**—Middle East; **DDPR, DMA**—Deputy Director, Plans and Requirements, Defense Mapping Agency; **VDMO**—Vice Director, Management and Operations; **USADSC**—U.S. Army Depot System Command; **DCASR**—Defense Contracting Administration Services Region; **DCDD, USAES, FBV**—Director for Combat Developments Directorate, U.S. Army Engineer School, Ft. Belvoir, Va.*



Back (left) and side views of the new M12 holster for the armed forces' 9-mm Beretta 92SB-F pistol, showing the removable, quick-release flap and the flexible cleaning rod stored in a sheath at the forward edge of the holster.

to the light infantry unit structure include the 3rd Battalion, 3rd Infantry; the 1st Battalion, 410th Infantry; the 409th Infantry Battalion and the 3rd Battalion, 14th Field Artillery.

New National Cemetery. The Veterans Administration (VA) has announced plans to establish a national cemetery at Prunytown, W.Va., with a proposed opening in the fall of 1986. This will be the nation's 110th national cemetery and will have space for an estimated 3,000 gravesites. The new cemetery is to be located on a 58-acre tract donated by the state.

The state's only other national cemetery, at Grafton, was closed to new interments in 1961. Development work on the new cemetery is scheduled to begin in March 1986.

Magazine for Enlisted Members. *Salute*, a bimonthly, leisure time oriented magazine focusing on the young enlisted audience, is scheduled to begin publication this month. The executive editor is Don Hirst, formerly an associate editor of *Army Times*. The pocket-sized *Salute* is being published by the same organization that produces *Family* magazine for commissary shoppers. The new publication will be distributed at military installations in the United States.

Holster Contract to Bianchi. The Department of Defense has awarded a $2.63 million initial contract to Bianchi International of Temecula, Calif., to produce 170,000 M12 hip holsters over the next three years. The M12 holsters will used with the 9-mm Beretta 92SB-F tol, which was adopted earlier this y as the standard sidearm for U.S. milit forces.

The M12 is considered a stronger more versatile holster than the M1916 well as being notably lighter. Olive d in color, it is made of a weather-resista ballistic nylon fabric outer facing wh covers a polyfoam core. Total weigh eight ounces. Special features of the M include: a removable, reversible flap allow wear on either side; a quick-rele belt fastener; and a stowed cleaning r

Camouflage Net Developed. Indiv ual concealment covers (ICCs) desig by the Army Troop Support Comma Belvoir Research and Development (R& Center, Ft. Belvoir, Va., were used s cessfully during the Team Spirit '85 e cise in South Korea. The ICC is a f foot by seven-foot camouflage net m of incised, coated nylon.

Each net weighs less than one po and may be folded so that it fits int soldier's uniform pocket. The panels be joined together to create a larger c er to conceal fighting positions and we ons emplacements as well as indivic soldiers. The ICC is being developed the Belvoir R&D Center through a qu response program at the prompting the 9th Infantry Division (Motoriz and the Army Development and Emp ment Agency, which is responsible light forces operational and equipm concepts.

'Should Be Required Reading'

The Reserve Components as Full Partners

Guard and Reserve in the Total Force: ıe First Decade, 1973-1983. *Col. Ben- e J. Wilson III, ed. National Defense ıiversity Press, c/o Superintendent Documents, Government Printing ffice, Washington, D.C. 20402. 340 ges; index; $8.*

By Lt. Col. Robert K. Griffith Jr.

s the United States entered the 1970s, weariness and frustration with the in Vietnam contributed to a general ement to reduce commitments abroad defense spending at home. In his first President Richard M. Nixon respond- the former sentiment by articulat- ıe Nixon Doctrine, which emphasized gth, partnership and negotiation for

Books

se in a multipolar world. President n's secretary of defense, Melvin R. , developed the total force approach pport of the Nixon Doctrine. originally conceived, the total force pt envisioned the application of all vorld capabilities and resources across ectrum of conflict to maintain peace. approach permitted the United States luce its level of defense expenditures ut sacrificing security. In effect, the ı Administration shifted from the war" philosophy of the Kennedy- on years to a "1½-war" posture and ded on allies and friends to con- e a greater share to mutual security gements, especially in Asia and the World.

practice, the term total force came applied solely to U.S. forces, and, particularly, to the relationship be- the active and reserve components. e sizable conventional forces raised e U.S. effort in Vietnam returned most were inactivated. Other ac- orce units were transferred to the e components, enabling the admin- on to trim expenditures by reduc- rce structure. In three years, ac- ilitary strength fell 30 percent. The and Reserve took up much of the as this book, edited by Col. Ben- Wilson III, U.S. Air Force, points

ay, for example, the Army Nation- ard and the Army Reserve contain cent of divisional forces, 67 per- support forces and 100 percent of ining divisions and brigades in the



Army's force structure, while the Air National Guard and the Air Force Reserve provide 50 percent of the strategic airlift crews, 65 percent of air defense interceptor crews and 100 percent of the air defense of the Hawaiian Islands. The story is similar for the Navy, Marine Corps and Coast Guard.

In addition to units, individual reservists play key roles in augmenting the total force in peace as well as in contingency situations. Current plans require fully half of Army National Guard and Army Reserve units to be committed within the first month of a mobilization. Individual reservists are necessary to help fill these units to war-strength as well as provide casualty replacements in the early stages of hostilities.

Thus, the total force policy, coupled with the other major defense initiative of the Nixon Administration, ending peacetime selective service, assures that the Guard and Reserve will play immediate crucial roles in future operations requiring much more than a division-sized force. This being the case, it is appropriate to inquire into the health of the total force in general and the Guard and Reserve in particular. Col. Wilson's book does so superbly.

Like most collections, *The Guard and Reserve in the Total Force* contains some essays that have appeared elsewhere and are somewhat dated in terms of their data or emphasis. The editor overcomes much of this by providing a solid organizational framework for his examination and by the inclusion of previously unpublished studies or essays prepared especially for this book; thus, this is not a retracing of old ground.

He begins by offering a historical perspective—a refreshing approach too often missing in volumes of this genre. The articles by Robert L. Goldich and Jonathan M. House demonstrate that the present reliance on the Guard and Reserve is hardly unique. Mr. Goldich reviews the long history of the relationship between the active and reserve components, while Mr. House focuses on the genesis of the present structure in the early twentieth century.

The remaining sections of the book address attitudes about the reserve components, manpower issues, equipment and logistical problems, and mobilization preparedness. In each section, the editor presents several articles that in their totality add up to a mixed review. Indeed, the thrust of the book suggests that a better title might have been *The Total Force: Myth or Reality?* As a previously unpublished study prepared by students at the National War College in 1982 concludes:

> Despite efforts by Congress, the Department of Defense and the Services to upgrade the National Guard and Reserves, questions persist about combat readiness, manpower shortages, mobilization time frames, and obsolete or unavailable equipment.

This book is not all gloom and doom. As the contributors point out, significant improvements in the manpower picture have occurred in the last several years.

Most of the personnel problems facing the Selected Reserve in the late 1970s, as presented in the article originally prepared in 1979 by Arthur L. Moxon, no longer exist—but, as Col. Wilson and James R. Engelage report in an essay prepared especially for the book, problems with pretrained individual manpower, especially the Individual Ready Reserve (IRR), persist. In addition to aggregate shortages, the IRR continues to have a mismatch of skills.

Furthermore, as several contributors point out, assumptions about IRR yield rates on mobilization remain tenuous at best. Still, personnel issues no longer top the list of reserve component problems.

All of the authors agree that the most critical limitation to Guard and Reserve effectiveness as part of the total force today is equipment. In another previously unpublished article, Col. Wilson and Wilfred L. Ebel conclude, "The most difficult challenge in the equipment area is increasing the quantity of equipment available to the U.S. Reserve ground forces." The

persistence of this problem is driven by the fact that the services historically have provided their reserve components with "hand-me-down" equipment.

Col. Wilson and Mr. Ebel note correctly the commitment by the Reagan Administration to equip Guard and Reserve units to wartime requirements and they acknowledge the progress made, especially among the Army's roundout units. They also note, however, that similar commitments made in the past came to grief due to revised priorities brought on by intervening crises or budgetary restrictions.

One must wonder how long the present commitment to equip the reserve components will continue in the face of rising political concern over the federal deficit and increasing pressure to reduce defense expenditures, ironically pressures not unlike those that led to the development of the total force policy in the first place.

In his final section, the editor offers several analyses of the reserve components' ability to mobilize as part of the total force. In the lead article of the section, Col. Wilson collaborates with James L. Gould to provide a succinct description of the mobilization process, including a summary of current issues. Kenneth J. Coffey analyzes the ability of the Guard and Reserve to mobilize for a conventional war in Europe, and Jon P. Bruinooge offers a provocative analysis of the potential for judicial obstruction of an unpopular mobilization.

Wilfred Ebel ends with a thoughtful summation. In 1961, he notes, it took seven months to expand the Army from 11 to 17 combat-ready divisions in response to the Berlin Crisis. Today, we expect to deploy major reserve components units within 30 days of their call-up; some smaller units must be ready to deploy in a matter of days without any refresher training. "As long as the United States has neither the people nor the equipment to bring its Guard and Reserve units to full wartime capability," Mr. Ebel c cludes, "the total force cannot be f ready."

This collection of essays is not l reading; nevertheless, it should be requ reading for everyone concerned with vital subject. People associated with reserve components and already fam with the issues will find in this book s arguments to buttress their efforts to ther improve Guard and Reserve post Readers unfamiliar with the issues find no better starting point at whic begin their self-education on this cri aspect of our national security.

LT. COL. ROBERT K. GRIFFITH teaches at the Industrial College o Armed Forces at Ft. McNair, Wash ton, D.C. He has just complete study at the Center of Military His of the Army's transition from the to the All Volunteer Force.

As a service to readers interested in obtaining books reviewed in *ARMY*, the mailing address of the publisher is included in the head notes for each main review and Varied Fare item. Readers are reminded that neither *ARMY* nor AUSA has the facilities to order books for them or to handle the related correspondence; inquiries and orders must be directed to the publisher.

The Editors

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'Rigorous Analysis' of Problems

Central America's Current Cris

Rift and Revolution: The Central American Imbroglio. *Howard J. Wiarda, ed. American Enterprise Institute for Public Policy Research, 1150 17th St., N.W., Washington, D.C. 20036. 392 pages; tables; figures; notes; $19.95 hardcover, $10.95 paper.*

By Gabriel Marcella

The debate on the appropriate policy for the United States to follow in Central America is characterized by a combination of passion, misinformation and ignorance of the complex societies in question.

Howard J. Wiarda, one of the most distinguished Latin American experts in the American academic community, who is currently associated with the American Enterprise Institute, has gathered an impressive collection of essays that deal with the fundamental causes of the current round of troubles in Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua.

The 12 essays illuminate various aspects of the internal and international dimensions of the contemporary crisis. Readers will find the chapters devoted to the external actors, such as the United States, Cuba, the Soviet Union, Mexico, and the European Socialists, and the introductory piece by editor Wiarda to be the most provocative.

Former United Nations Ambassador Jeane J. Kirkpatrick contributes an updated version of her famous essay, "U.S. Security and Latin America," which provided the intellectual framework for gan Administration policy toward tral and Latin America.

In another essay, Mark Falcoff desc Central America as the apple of dis for domestic American politics and c to pessimistic conclusions about coher and consistency in U.S. foreign po

Readers searching for policy pres tions may not be satisfied by this ume. The book's strength lies in the ysis of the problem, and rigorous a sis is, after all, fundamental for effe policy.

The problems of Central Americ deeply rooted and systemic. They ar problems of vulnerable economies fragile political institutions unable to with the twin challenges of recession a new sophisticated revolutionary wa dedicated to not merely reforming old order but to replacing it with au itarian governments of the left, no like that which took over after the f Nicaraguan President Anastasio Som

The many dilemmas for U.S. p makers are complex. This book is a cellent starter for a responsible di sion of those dilemmas.

GABRIEL MARCELLA, Ph.D., is pr sor of Third World studies and c tor of regional studies at the U.S my War College, Carlisle Barr Pa. He is coauthoring a book on policy in Central America, and u member of the U.S. Atlantic Cou Working Group on the Caribbea sin.

veloping 'Practical Leadership'

he Story of Army War College

Responsible Command: A History of ie U.S. Army War College. *Col. Har- y P. Ball, U.S. Army, retired. Alumni ssociation of the U.S. Army War Col- ge, Box 462, Carlisle Barracks, Pa. 7013. 534 pages; illustrations; notes; ibliography; index; $18.50 plus $1.50 ostage.*

By Col. Stanley L. Falk
U.S. Army Reserve, retired

November 1899, in his first annual eport as secretary of war, Elihu Root mmended the establishment of an ny war college." Four years later, cating the new War College building hat is now Ft. McNair in Washing- D.C., Mr. Root reminded his listen- hat the duty of the institution was study and confer on the great prob- of national defense, of military sci- and of responsible command."

st how well the Army War College met this challenge is the theme of impressive new history. The author, nfantry officer and a former War ge faculty member, has a Ph.D. in American history. His comprehensive, well-researched, clearly written and objective account examines the War College within the larger framework of the maturation of the American army and of changes in national and international affairs.

The origins of the Army War College lay in the development of the Prussian General Staff, in advances in European and American military education, and in the growth of professionalism in the post-Civil War American army. The catalyst, however, was the Army's embarrassing and chaotic experience in the Spanish-American War. The failures and deficiencies revealed by that experience led almost directly to the Root reforms: the modernization of the Army, its staff and its officer education system.

Not surprisingly, the Army War College was a hybrid: both an academic institution and an operational part of the new War Department General Staff, focusing on military planning and intelligence. Until World War I, learning by doing was the theme.

Whatever accomplishments this arrangement may have produced, it fell short of both the intellectual objectives and the higher planning goals initially conceived for the college. Essentially, a foundation had been laid, but a solid edifice of senior military education still had to be constructed.

The post-World War I period brought a release of the War College from the



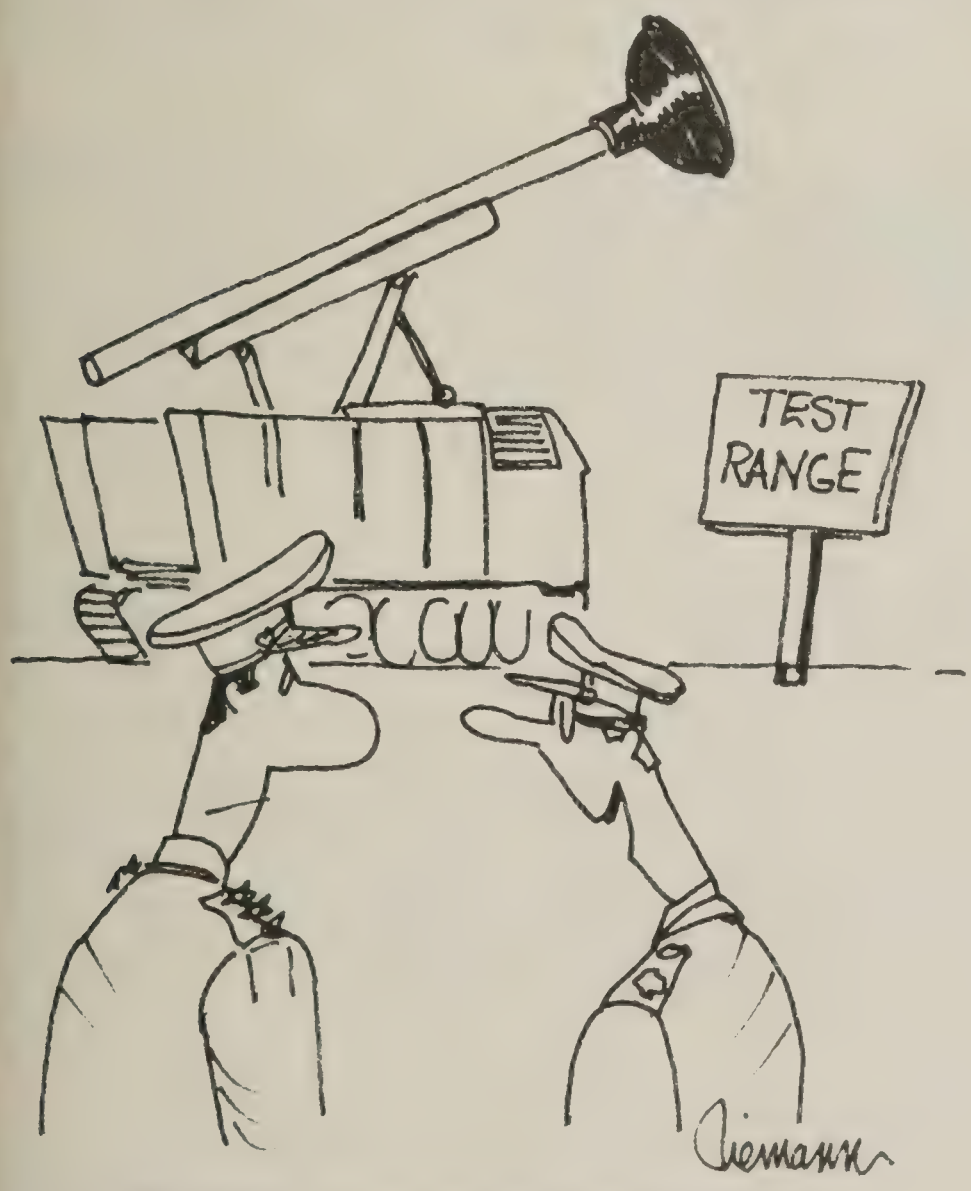
structural control of the General Staff and opened the way for the school to grow as an educational institution. Conflicting theories and leadership aims nevertheless slowed the development of a clear, generally accepted program for the War College until the early 1930s.

Still, an impressive pattern of professional development was gradually beginning to emerge. If, as Col. Ball observes, these years produced no great strategic thinkers, they did give the Army the practical military leadership with which to fight and win World War II.

Closed by the outbreak of World War II and by the postwar development of a joint service educational system, the Army War College reopened in 1950, initially at Ft. Leavenworth, Kan., and subsequently at Carlisle Barracks, Pa., where it has made its home ever since.

The decades that followed were a period of reexamintion, reevaluation, change and growth, responding to the shifting demands and philosophies of differing Department of Defense administrations and the turmoil of the Vietnam war.

Throughout these years, the primary aim of the War College has been to produce practical leadership for the Army within an intellectual and educational environment. "Only secondarily," notes the author, has the college "felt an obligation to the student as scholar, to a larger body of scholarship, or to the advancement of a field of knowledge or discipline." In this, it has differed from the civilian graduate schools that it has sometimes tried



"Ironically, Sir, the lab gang found it had magnificent flight dynamics and a larger payload."

SCIENCE/SCOPE®

Combat vehicle drivers will soon be able to see through darkness, smoke, and haze with a new thermal imaging device. The Driver's Thermal Viewer (DTV) is planned for the U.S. Army's M1 Abrams tanks, M2/M3 Bradley Fighting Vehicles, and M60A3 tanks. It is small and compact, and can be installed in the driver's hatch of these vehicles without modification to the armor or driver station. The DTV produces a TV-like image by sensing variations in temperatures between objects and their backgrounds. It will replace an image intensifier device, which amplifies ambient light. Hughes Aircraft Company is building 20 models of the viewer for evaluation by the Army.

A U.S. Army laser device has proven to be extremely reliable in tests. The Ground/Vehicular Laser Locator Designator (G/VLLD), which determines distances to targets and illuminates targets for laser-homing weapons, achieved its goal of operating a mean time of 100 hours between failures. G/VLLD systems have operated for the equivalent of more than 108,000 designation missions and more than 45,000 ranging and location missions for a period exceeding 600 hours. The Hughes device can be mounted on armored vehicles or used with a ground tripod.

A night vision system can be switched quickly and easily among different kinds of helicopters, thanks to a unique electronic module. The Hughes Night Vision System (HNVS) is a low-cost, forward-looking infrared (FLIR) system that provides excellent imagery and object detection in any weather, day or night. A microprocessor-based "personality" module allows a single system to be moved within a fleet of helicopters, providing more flexible operations and better cost effectiveness. HNVS tailors its data processing to a specific helicopter once the system is installed and a simple aircraft identification code has been entered into the personality module.

A device that evaluates military lasers instantaneously is giving industrial and government laboratories new capabilities for measuring the performance of lasers. The computerized system, called an automatic laser test set (ALTS), monitors and stores information such as beam energy, divergence, misalignment, pulse shape, pulse spacing, and pulse stability during a laser's warm-up period. It detects variations that cannot be determined by conventional techniques, which use electro-optical/mechanical apertures and take an average of multiple pulse measurements. By evaluating variations from pulse to pulse, engineers can improve future laser system requirements and specifications. Hughes supplies ALTS to the U.S. Army.

For the first time, information from NATO's air defense network and AWACS aircraft can be correlated into a single air picture so commanders on the ground can more accurately assess situations and direct fighter interceptors against intruders. The Airborne Early Warning/Ground Environment Integration Segment (AEGIS) relays radar data from AWACS aircraft to more than 40 ground stations throughout Europe. Computers integrate the data with ground-based radar data and feed the information to consoles in NATO Air Defense Ground Environment (NADGE) centers. The key component in AEGIS is a jam-proof communications link known as the Joint Tactical Information Distribution System (JTIDS), which provides voice and digital communications between the aircraft and ground centers. The JTIDS Class 1 terminals, provided by Hughes, spread message transmissions in time and frequency to enhance capacity and jam resistance well beyond conventional systems.

For more information write to: P.O. Box 45068, Dept. 75-2, Los Angeles, CA 90045-0068

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mirror and to which it is often com-red.

The Army War College, concludes Col. ll, has thus remained loyal to Secretary ot's initial mandate. It has sought to ate a medium for the development of sponsible command," although its un-standing of that concept has often fted. This volume is a fitting portrait that commendable effort.

L. STANLEY L. FALK, U.S. Army Reserve, retired, Ph.D., was formerly deputy chief historian for Southeast Asia at the U.S. Army Center of Military History and is the author of five books on World War II.

cellent Photographs

Detailed Guide To Ardennes

tle of the Bulge: Then and Now. *Jean Paul Pallud. London: After the Battle Magazine. Distributed by Bill Dean Books Ltd., 151-49 7th Ave., Whitestone, N.Y. 11357. 513 pages; table of comparative ranks; list of awards; photographs; maps; bibliography; index. $49.95.*

By Charles B. MacDonald

ver many years, the British periodical, *After the Battle*, has estab-ed a solid reputation for essays em-ving photographs from World War II aposed with current photographs of same battle sites.

n conjunction with the magazine, French or Jean Paul Pallud has produced a nmoth work with a detailed text and 0 photographs of past and present es in the Ardennes region of Belgium Luxembourg.

Mr. Pallud's text is hardly to be con-red definitive, for the author has re-primarily on published works and etimes repeats the errors of those ks. He has used few original sources r than recent first-person accounts German participants, which he quotes ch detail as sometimes to distort the nce of the narrative.

hat may account for his attempt to unt what he calls the "official" ver-of the massacre of American prison-of war near Malmédy, Belgium, and some credence to the explanations ostwar apologists. Had the author d with survivors of the massacre, he ld know that the official version, is, d, correct.

milarly, Mr. Pallud affords some cre-e to a theory occasionally heard in Belgium that the three mistaken bombings of Malmédy by American planes represented a deliberate attempt to turn the town into a choke point. Would the Americans deliberately bomb their own troops? The fact is, the three mistaken bombings were pilot error; nothing more, nothing less.

The detailed text, nevertheless, provides much for ardent students of the battle. For example, there are exact reproductions of the German attack plans and histories of the attacking units.

Yet, in the final analysis, the real attraction of the book is its photographs. The author has done extensive research on them: identifying the sites, correcting erroneous captions and determining the origins (some well-known German still photographs, for example, are from staged German newsreels).

Anyone planning a return to the Ardennes would do well to take the book along, even though it weighs over seven pounds. It provides a guide both to what happened that fateful December and to the modest memorials and other sites worthy of visits today.

CHARLES B. MacDONALD is former deputy chief historian for Southeast Asia at the Army's Center of Military History. He is the author of several books on military history, most recently A Time for Trumpets: The Untold Story of the Battle of the Bulge.



The Bloody Road to Panmunjom. *Edwin P. Hoyt. Stein and Day, Scarborough House, Briarcliff Manor, N.Y. 10510. 320 pages; notes; bibliography; maps; photographs; index; $18.95.*

Military historian Edwin P. Hoyt describes combat in the Korean War from the entry of Chinese forces in late 1950 through the ultimate peace agreement more than two and one half years later. The lively narrative is based on secondary sources and is punctuated by the author's vigorous opinions and conclusions.

The Stars and Stripes World War II Front Pages. *Hugh Lauter Levin Associates Inc. Distributed by Scribner Book Companies Inc., 130 West 17th St., New York, N.Y. 10011. 220 pages; photographs; maps; illustrations; $19.95.*

From the spring of 1942 to V-J Day, these pages from the famous U.S. military newspaper tell the story "of the fighting but also the human interest accounts of life in the armed forces and news from back home." With its primary coverage devoted to the European theater of war, the front pages include most of the major combat gains, but also such newsworthy items as "Gendarmes Curb Paris Night Life" and "Cardinals Win World Series." The photographs from the reproduced front pages vary in quality, and the majority are rather poor. Another distraction is the size and clarity of the print, which is quite small and at times illegible.

Jane's Military Review. *Ian V. Hogg, ed. Jane's Publishing Inc., 135 West 50th St., New York, N.Y. 10020. 176 pages; photographs; $14.95.*

Now in its fourth year of issue, this volume contains articles by military experts on a wide variety of subjects, from the lessons of the Grenada campaign to all-terrain vehicles to new types of armored clothing for front-line troops. A large number of excellent, detailed photographs accompany the text.

International Security Yearbook 1984/85. *Barry M. Blechman and Edward N. Luttwak, eds. Westview Press, 5500 Central Ave., Boulder, Colo. 80301. 260 pages; tables; maps, list of abbreviations; index; $33.00.*

Published in cooperation with the Center for Strategic and International Studies, Georgetown University, this annual offers a summation of the basic facts underlying the changing balance of military power between East and West and the status of conflicts and political relations in each region of the globe. The authors of this yearbook determine which global events have been the most significant and analyze their impact on national interests and the future course of U.S. policy.

The Militarists: The Rise of Japanese Militarism Since WW II. *Edwin P. Hoyt. Donald I. Fine Inc., 128 East 36th St., New York, N.Y. 10016. 256 pages; photographs; chapter notes; appendices; bibliography; index; $14.95.*

Another work by the prolific historian, this book analyzes the rise of Japanese militarism since World War II, focusing on the tradition of Japanese militarism, economic factors within Japan which support the military, U.S. pressure on Japan to rearm, right-wing forces within Japan that are encouraging rearmament and the growth of a new Japanese nationalism. He documents how, in violation of the MacArthur Constitution and—ironically—with the encouragement of the United States, Japan has developed a growing military machine. The end result, he theorizes, could be a link-up of power between Japan and China.

The Trauma of War: Stress and Recovery in Viet Nam Veterans. *Stephen M. Sonnenberg, M.D., Arthur S. Blank Jr., M.D., and John A. Talbott, M.D., eds. American Psychiatric Press Inc., 1400 K St., N.W., Washington, D.C. 20005. 454 pages; chapter notes; index; $24.95.*

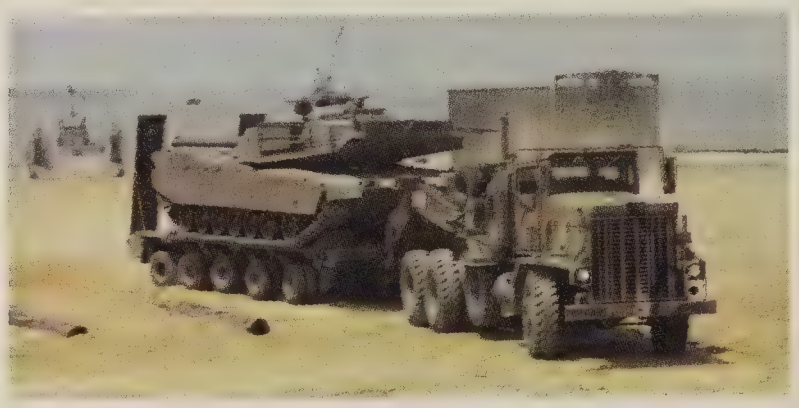
This book examines the factors that influence the development of, and recovery from, post-traumatic stress disorder among Vietnam veterans.

Although the authors and editors provide a scientific inquiry into the psychological damage inflicted on some veterans, the individual voices of these men and women are heard through the use of numerous descriptions, case studies and quoted material.



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AUSA in Action

ward Presentations Acclaim lembership Drive's Success

nembership meeting of AUSA's Coastal re Chapter featured a large number of d presentations for this year's member- drive efforts. Awards, many of which donated by the local AUSA chapter's orate members, were given to individual bers, unit representatives and chapter bers who have provided support to sol-

j. Gen. Andrew L. Cooley, commander e 24th Infantry Division and Ft. Stewart- er Army Airfield, Hazel Carter, Liberty ty commissioner, and chapter president artman made the presentations during eeting at nearby Cherokee Rose Coun- lub in Hinesville, Ga.

persons were recognized for individual bership achievements: 1st Sgt. George dgers, Company B, 2nd Battalion, 34th ry; Sgt. Leonard R. Williams, Compa- 3rd Battalion, 19th Infantry; 1st Sgt. Williams, 110th Quartermaster Com- 260th Quartermaster Battalion; 1st Sgt. G. Moore, Company B, 24th Supply ransportation Battalion; 1st Sgt. Walas s Jr., Battery D, 5th Battalion, 52nd Air se Artillery; and Pfc. Joe M. Ricks, ry B, 1st Battalion, 13th Field Artillery. received an AUSA plaque from Gen. y, an AUSA certificate from Hazel Car- d a $50 savings bond from Ed Gart-

se honored as the best corporate mem- ip recruiters in each brigade-sized unit led: CSM Robert M. Kanardy, Head- ers and Headquarters Company, 2nd ion, 21st Infantry; S.Sgt. Teddy R. Hen- n, S2 section, Victory Brigade; Capt. Bruens, Service Battery, 1st Battalion, Field Artillery; and Pat Johnson of the n's G5 section. They also received the plaque and certificate and a $50 sav- ond.

ards for best individual membership vement by company-sized units went mpany B, 2nd Battalion, 34th Infantry; any E, 3rd Battalion, 94th Infantry; Quartermaster Company, 260th Quar- ster Battalion; Company B, 24th Sup- d Transportation Battalion; Battery D, ttalion, 52nd Air Defense Artillery; and y B, 1st Battalion, 13th Field Artillery. alion-sized units honored for individu- mbership achievement included: the attalion, 21st Infantry; 3rd Battalion, nfantry; 24th Supply and Transporta- attalion; 260th Quartermaster Battal- h Battalion, 52nd Air Defense Artillery; st Battalion, 13th Field Artillery.

best recruiter award went to Capt. s, who recruited 18 new corporate members from Claxton, Ga., in addition to his individual membership efforts within his unit. Two battalions cited for highest individual membership achievement—the 5th Battalion, 52nd Air Defense Artillery, and the 24th Supply and Transportation Battalion—each received a $200 check from the Coastal Empire Chapter to be used for a unit activity.

The final awards of the meeting were presented to individuals for sustained or special activity support. Charlie Rowland, mayor of Glennville, Ga., received an AUSA plaque for his more than 15 years of sustained support of the chapter. Wesley Allen, assistant housing manager at Hunter Army Airfield, was honored for his service to the soldiers in improving guest housing at the Hunter installation. Jane Painter, the Delta Airlines corporate member designee, was presented a plaque in recognition of her support of the Liberty County "victory run." First Sgt. Sherman R. Walling of the 24th Finance Company was also honored.

GENE SEXTON □



Coastal Empire Chapter. *Charlie Rowland, mayor of Glennville, Ga., receives an AUSA plaque from Maj. Gen. Andrew L. Cooley, commander of the 24th Infantry Division and Ft. Stewart, as an expression of the Coastal Empire Chapter's appreciation for Mr. Rowland's over 15 years of sustained support of the chapter and AUSA.*

Speaks on 'Four Pillars of Defense'

LTG Register Addresses Alabama Group

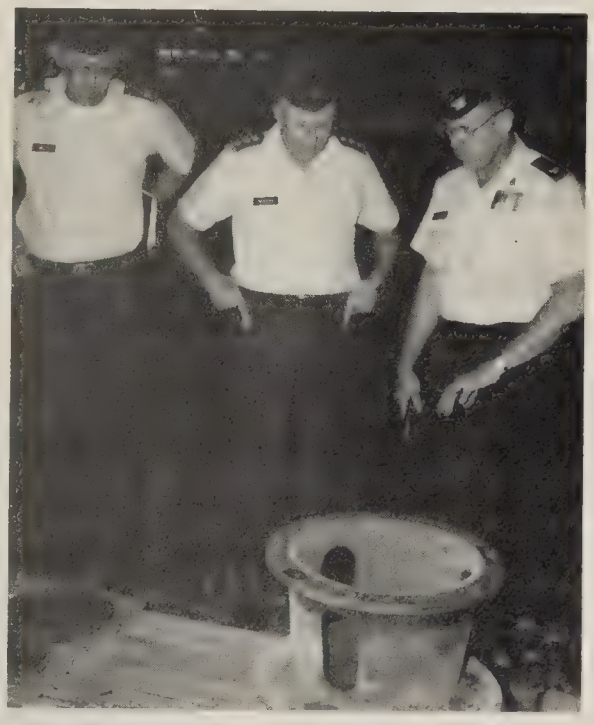
The Army's deputy chief of staff for logistics, Lt. Gen. Benjamin F. Register Jr., visited Anniston Army Depot this fall for a series of briefings, a tour of various departments on the installation and an AUSA luncheon. Gen. Register was the guest speaker at a luncheon sponsored by the depot's subchapter of AUSA's Gallant Pelham Chapter.

Gen. Register discussed "the four pillars of defense." The first pillar is readiness, which includes materiel readiness and the ability to sustain "critical logistics distance." The second pillar is the Army's modernization program. Gen. Register noted, "During the seventies the Army had negative growth, but starting in 1981 the Army's ability to grow asserted itself and today is really getting under way. Our ability to give soldiers modernized equipment is added combat power."

Sustainability is the third pillar. "To the soldier in the field sustainability is dependent on the materiel that is actually on hand to use. Others feel it is stockpiled materiel," said Gen. Register. "Sustainability must be considered a part of both of these views."

"The fourth and most important pillar is the ability to get the right size and type of equipment to the proper place at the proper time," he noted. "Logistics is wrapped up in all of these pillars."

Gen. Register concluded, "Today's Army is better supplied than ever before, thanks in large part to the tremendous efforts put forth by the depot system and its people."



Gallant Pelham Chapter. *Lt. Gen. Benjamin F. Register Jr., the Army's deputy chief of staff for logistics, toured Anniston Army Depot (Ala.) before addressing a depot subchapter luncheon. Here Gen. Register is shown a road wheel from an M60A3 tank which is being overhauled and converted to an M60A5. At left is the depot commander, Col. Edward L. Wills, and at right, Col. William R. Crawford, who is briefing Gen. Register.*

Ft. Bragg Chapter Gives Scholarships

Seven scholarships were awarded by the Braxton Bragg Chapter to Ft. Bragg personnel or their dependents for the 1985-86 school year. The scholarships, funded by Carolina Telephone and the Joe Barr Fund, are awarded annually to recipients selected by the chapter's scholarship committee. This year, four $1,000 scholarships were awarded by Carolina Telephone and one $1,000 scholarship and two $500 scholarships were awarded by the Joe Barr Fund.

The winners this year were Samantha Greer, Angela Morrell Sharp, Stephanie Emory, Miriam M. B. Ribeiro, Jennifer D. Rhodes, Linda Jean Hopple and Diane Renee Woodley.

Samantha Greer, recipient of a $1,000 Carolina Telephone scholarship, is the daughter of 1st Sgt. Larry G. Greer, C Battery, 3rd Battalion, 68th Air Defense Artillery. She plans to attend North Carolina State University and major in predentistry.

Angela Sharp, wife of Sgt. James Sharp Jr. of the 7th Special Forces Signal Company, is another Carolina Telephone scholarship winner. She attends Campbell University and is pursuing a degree in business management.

Stephanie Emory and Miriam Ribeiro also received $1,000 Carolina Telephone scholarships. Stephanie, the daughter of M.Sgt. Billy Emory, Headquarters Company, U.S. Army Garrison, plans to study art and business at East Carolina University. Miriam, the daughter of SGM Anthony J. Ribeiro Jr. who is assigned to the John F. Kennedy Special Warfare Center, plans to go to Appalachian State University and work toward a degree in information systems.

Jennifer Rhodes, whose father is retired from the Army, won the $1,000 Joe Barr Scholarship. She hopes to attend the University of North Carolina and become a physician.

Linda Jean Hopple and Diane Renee Woodley were the two $500 Joe Barr scholarship recipients. Linda, wife of S.Sgt. Gordon Hopple, C Company, 1st Battalion, 5th Special Forces Group, teaches at Fayetteville Technical Institute's Ft. Bragg campus. She is enrolled at Methodist College and is seeking a degree in computer science. Diane is the daughter of CSM John L. Woodley, 5th Battalion, 8th Field Artillery. She plans to attend Campbell University and major in prelaw.



Korea Chapter. *Lt. Gen. James E. Moore Jr., commander, Combined Field Army (ROK U.S.), accepts a plaque from Jung-ki Park, chairman of the chapter's corporate members. The plaque commemorates joint U.S. and Republic of Korea participation in Exercise Team Spirit '85. A banquet and show were held to honor exercise participants*

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★ STAR CHAPTERS ★

Chapters that reach their aggregate membership targets are classified as Star Chapters and will retain that status until they fail to reach any subsequent membership goal. The following chapters have achieved Star Chapter status. Chapters annotated with an asterisk have attained the semiannual goal based upon the 31 December, 1985, membership targets and the end-September, 1985, membership statistics. Those chapters without an asterisk achieved their Star Status based upon the 30 June, 1985, membership goals.

* AFCENT Community (Brunssum, The Netherlands)
* Alaska (Anchorage)
* Albuquerque (N.M.)
Ark-O-Tex (Texarkana, Tex.)
Bavarian Alpine (Munich, Ger.)
* Blue Mountain (Harrisburg, Pa.)
Bogardus S. Cairns (Ft. Rucker, Ala.)
* Braxton Bragg (Ft. Bragg, N.C.)
* Capital District of New York (Albany)
* Chattahoochee Valley-Ft. Benning (Columbus, Ga.)
Coastal Empire (Ft. Stewart, Ga.)
* Dallas (Tex.)
* Daniel Boone (Ft. Knox, Ky.)
Dix (Ft. Dix, N.J.)
* Dwight D. Eisenhower (Palm Springs, Calif.)
Fort Armstrong (Rock Island, Ill.)
Ft. Monmouth (N.J.)
* Fort Pitt (Pittsburgh, Pa.)
* Ft. Riley-Central Kansas
* GA Omar N. Bradley (Ft. Bliss, Tex.)
* Gen. Creighton W. Abrams (Frankfurt, Ger.)
Gen. Joseph W. Stilwell (Ft. Ord, Calif.)
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Southern Arizona (Ft. Huachuca)
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Southwest Oklahoma (Ft. Sill)
* Southwestern Michigan (Battle Creek)
Spearhead (Frankfurt, Ger.)
* Stuttgart (Ger.)
* Tacoma-Ft. Lewis-Olympia (Wash.)
* Thomas Jefferson (Charlottesville, Va.)
Tennessee-Kentucky (Ft. Campbell, Ky.)
Yorktown (Zweibrücken, Ger.)

ound the Chapters



gardus S. Cairns Chapter. *Chapter president Frank Moore presents a certificate recognition to Army Community Services (ACS) volunteer Martha Beetem in recognition of her selection as the ACS Volunteer of the Month. At the chapter meeting, Mrs. etem also received gift certificates from AUSA chapter corporate members and a ar's membership in the Bogardus S. Cairns Chapter.*



Ft. Lee, Va. *Brig. Gen. Charles R. Henry, the Army's competition advocate general, presents an AUSA distinguished graduate plaque to Capt. Bruce L. Kidder, the honor graduate of the logistics executive development course, U.S. Army Logistics Center.*



Arkansas Chapter. *Lt. Gen. Arthur E. Brown Jr., director of the Army Staff, Office of the Chief of Staff, left, was the guest speaker at the Arkansas Military Ball. Next to Gen. Brown are, from left to right, Col. R. W. Whitehead, Little Rock, Ark., district engineer, Army Corps of Engineers, his wife Linda and Col. Harold L. Gwatney, commandant of the 415th U.S. Army Reserve School.*



Ft. Campbell, Ky. *CSM Oscar L. Barker (front row center), U.S. Army Forces Command (FORSCOM), is flanked by AUSA's CSM Douglas S. Russell, USA, Ret., right, director of retiree affairs, and CSM Al Kaczmarek, USA, Ret., deputy director of regional activities. CSMs Russell and Kaczmarek addressed the command sergeants major attending the FORSCOM CSM Conference.*

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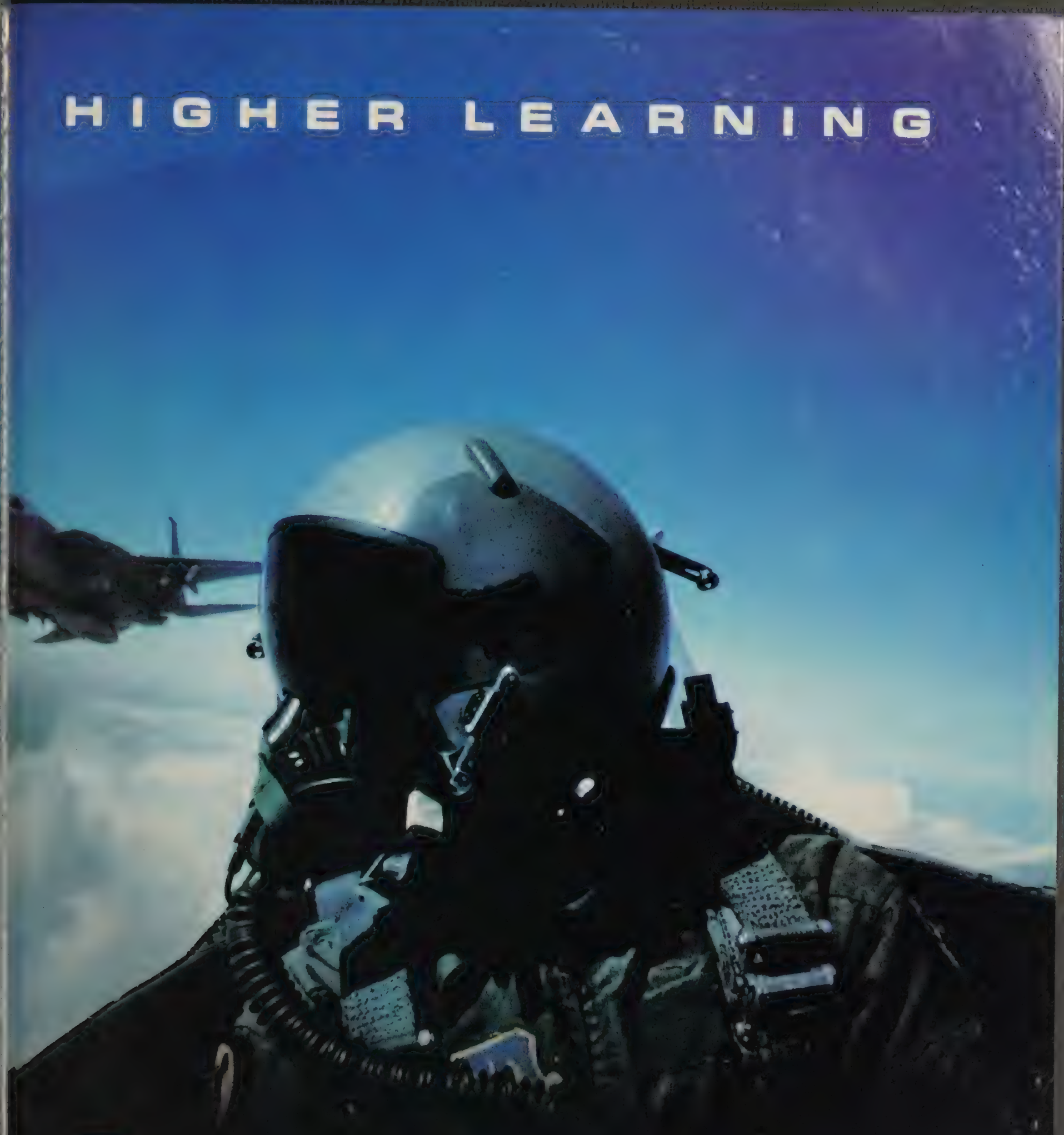
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D. Free distribution by mail, carrier or other means, samples, complimentary, and other free copies	3,779	2,45
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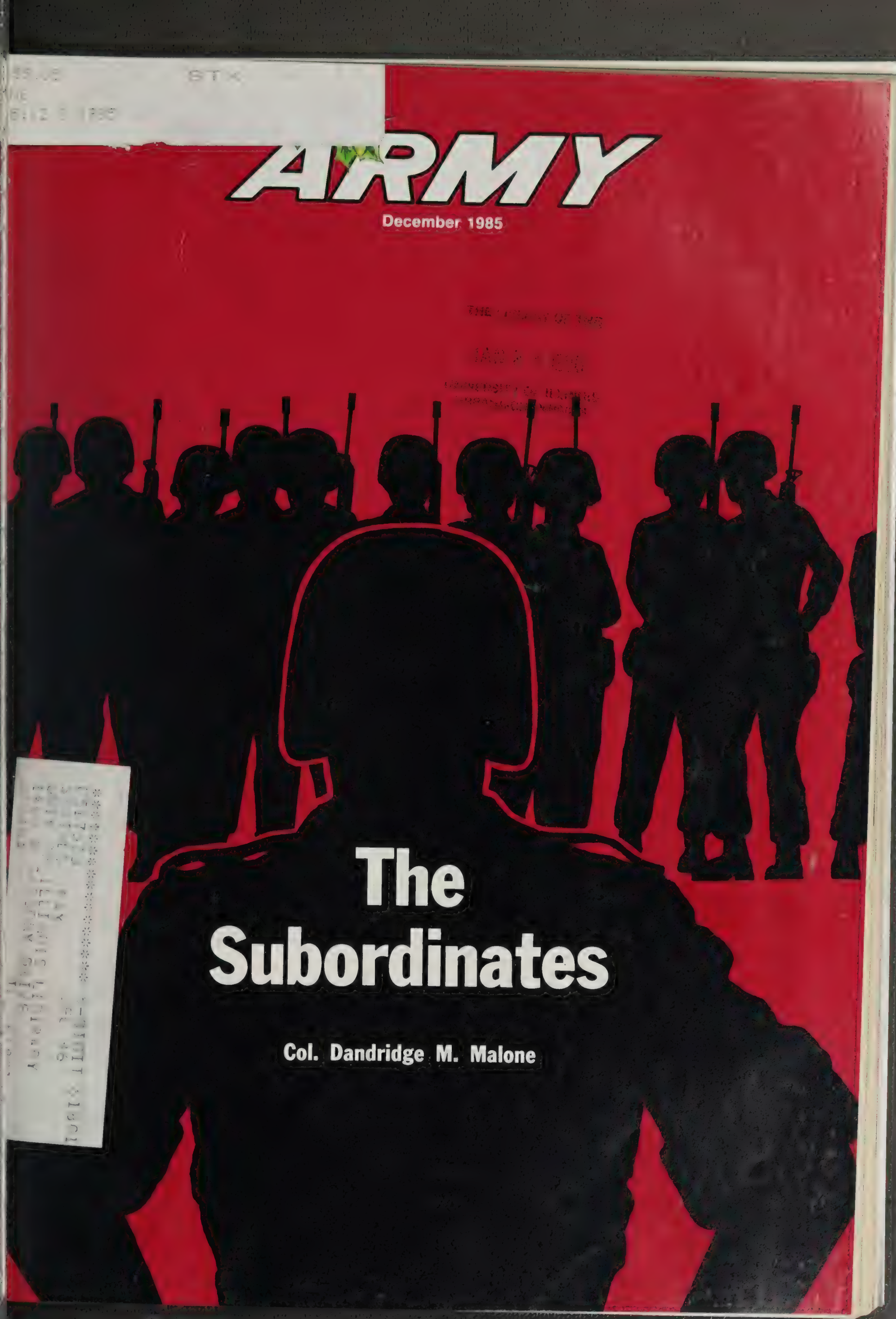
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ARMY

December 1985



The Subordinates

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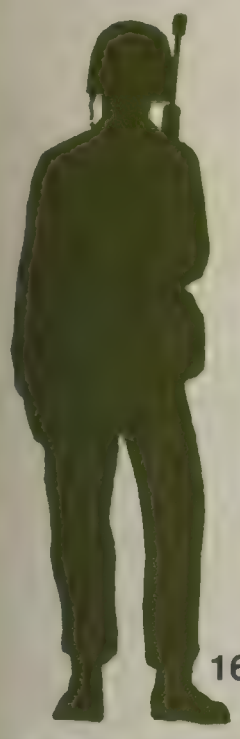
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ARMY
The Magazine of Landpower

VOL. 35, NO. 12 Published by the Association of the U.S. Army DECEMBER 1985

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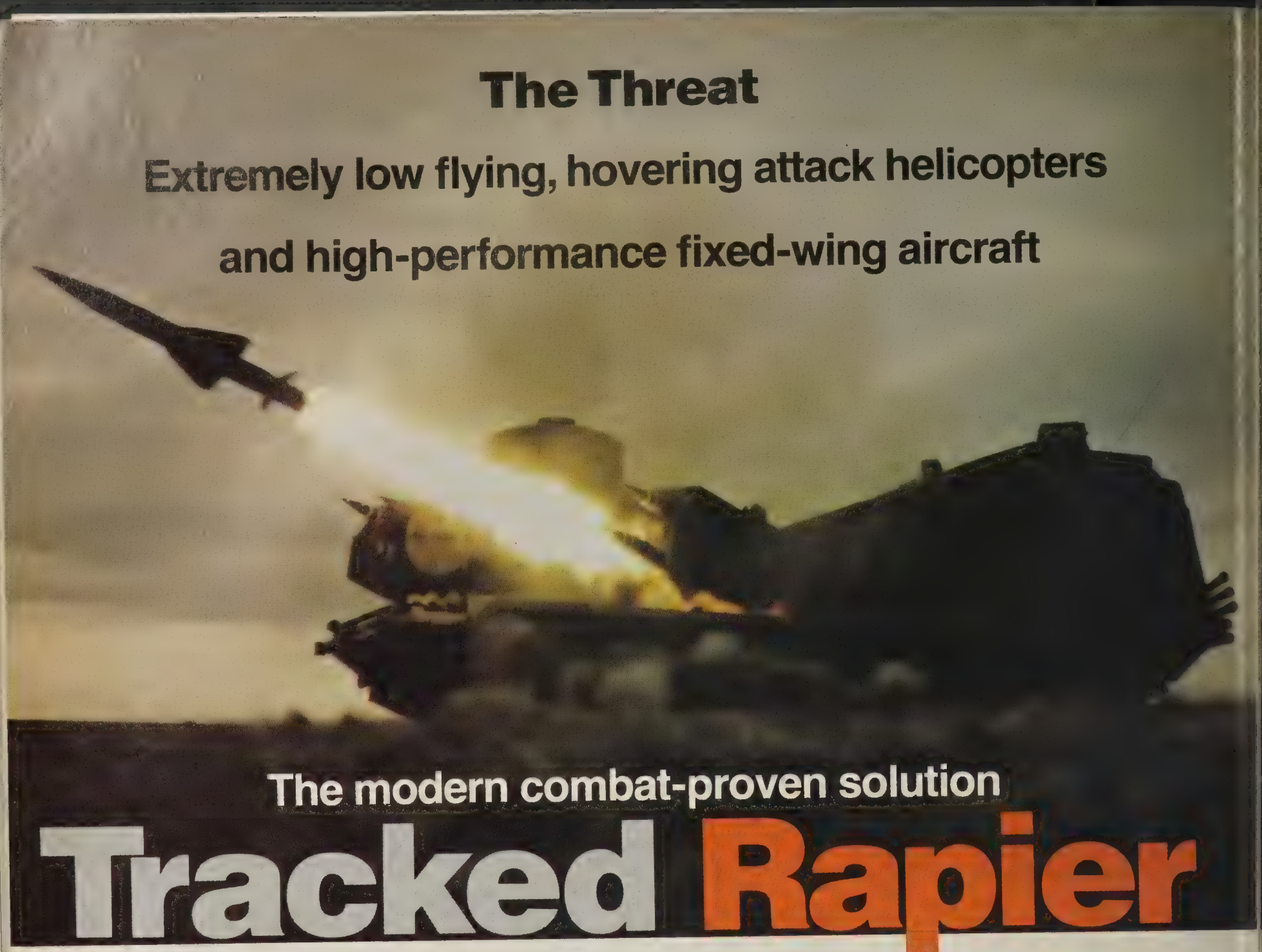
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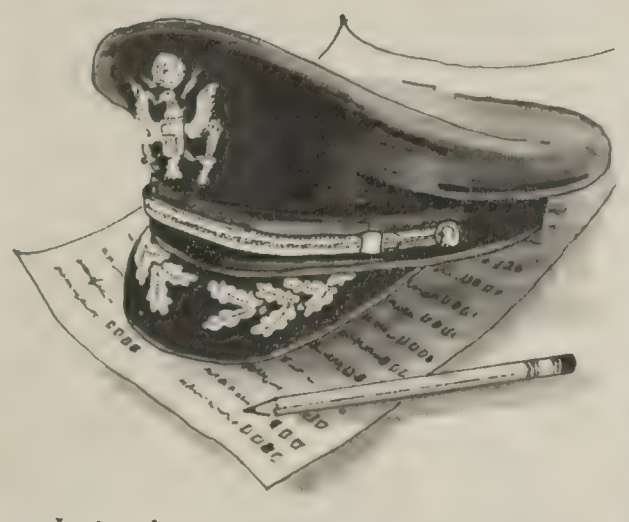
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Can Psychological Tests Find the 'Ideal' Leaders?

■ We have reached a dismaying and dangerous point in our search for tomorrow's leaders with the use of psychological tests in determining leadership potential and with the use of some pseudo-psychological acronym defining the supposed leadership traits required for success on the AirLand battlefield. In Maj. Michael L. McGee's article ("In Search of the Ideal Leader," "Front & Center," September), he gives a summary of an ideal personality profile of an AirLand Battle leader.

Maj. McGee indicts the Army's training and personnel management policies



Letters

on the basis of a paper-and-pencil temperament profile, the Myers-Briggs Type Indicator (M-BTI). He admits though that the results may not be totally reliable. Contrary to what Maj. McGee would have us believe, one psychological test or personality profile inventory (especially the paper-and-pencil type) is *never* totally reliable (any honest industrial psychologist would confirm that).

One of the greatest known problems of using psychological tests to determine future performance is that the higher the level of the job, the more difficult it has been to predict performance by means of psychological tests. It is one thing to use such a test as the Minnesota Clerical Test or the General Clerical Test to select clerk typists, but the use of one personality profile to determine combat leadership potential is ludicrous.

In one famous case, a study was conducted to evaluate the predictive reliability (how well a test predicts future performance) of a set of personality tests used to select potential business leaders. The subjects were a group of corporation presidents, board chairpersons and promising middle management executives who were all tested the same as incoming candidates for their present positions. The results showed that half of the most dynamic and successful business leaders of today would have never been hired if they had taken those tests during their initial selection period (that is poor predictive reliability).

There are just too many problems with psychological testing (untrained testers, overacceptance of tests, tests that lack reliability and validity, faking test responses, sloppy test administration, and so forth) to base a wholesale indictment of the Army's officer training and selection program on one result.

It is also strange how Maj. McGee, other than through some statistical wizardry, can claim, "the demonstrated path to success, assuming that being a general defines success, appears to be one of personality growth and development that is demonstrably different from what may be required for success on the AirLand battlefields of the future."

How large was the sample tested at the Naval War College? How many brigadier generals were tested at the Leadership Center? How many officers are two percent and 51 percent of the total population of brigadier generals? What method was used by either the Leadership Center or Maj. McGee to generalize the results to the entire population of generals and colonels in the Army?

Maj. McGee's entire argument for changing the system (vast improvements are necessary, but not based on the M-BTI) is based on an admitted unscientific study, where little evidence is produced. Generalized statements of fact, without supporting evidence, become mere opinion.

CAPT. SCOTT DICK
Lexington, Ky.

■ I congratulate Maj. Michael L. McGee on his insightful analysis of the personality profile of the ideal leader ("In Search of the Ideal Leader," "Front & Center," September).

The author might have pointed out that the ideal Myers-Briggs Type Indicator ENFP (for *e*xtrovert, *i*ntuitive, *f*eeling, *p*erceptive) personality is found in five percent of the general population. Finding only 3.5 percent in a group of 144 persons is statistically significant (using the Z-Test for instances). But had the group been fully representative of the general population, there would have been seven ENPFs instead of five—and the remaining 137 infantry second lieutenants would still not have measured up to the ideal.

MAJ. GREG BAXTER
U.S. Army Reserve
Dallas, Tex.

■ The September issue of ARMY contained an article by Maj. Michael L. McGee titled "In Search of the Ideal Leader" ("Front & Center"). The thrust of this piece was twofold: first, that the attributes of the leader needed on the AirLand battlefield are discernible from Army doctrine; second, that personality indicators exist which assess the degree to which one possesses these attributes.

First, let us examine the assessment instrument, the Myers-Briggs Type Indicator (M-BTI). As the author points out, basing personality profiles on a single assessment method is not totally reliable and many attributes are not addressed by the M-BTI.

Nevertheless, the instrument is the best single indicator that is available for a number of important reasons. Its reliability and validity data are excellent. More important than its statistical properties is its understandability and, therefore, its usefulness; that is, nonpsychologists can use the information gained about themselves and others to improve an organization.

Finally, this instrument has a relatively long history of use in the armed forces. Army chaplains have used it effectively since at least 1978 and have made it available to others. Furthermore, in addition to the sources of data mentioned by Maj. McGee in his article, the Army War College and the three major colleges which constitute the National Defense University have made extensive use of the instrument for several years. More recently, the Marine Corps Command and Staff College at Quantico, Va., is assessing its students with the M-BTI. This information is provided as a means of saying that many individuals are familiar with this particular instrument and find it quite useful.

Even though many individuals find the instrument useful, the particular application made in the article is not correct. Isabel Briggs Myers, the developer of the instrument, contends that people should not be discouraged from pursuing an occupation because they are "not the type." On the contrary, these individuals often turn out to be valuable as contributors of abilities which are rare among their co-workers (Myers and Myers, 1980). To the degree that this is true, it would seem that the organization should not select individuals based on perceived need for a particular type because if this were done, valuable contributions from others would be lost.

Another reason that selecting a particular type for a particular job may not be wise can be seen when one considers that the letters ENFP (for *e*xtrovert, *i*ntuitive,

feeling, perceptive) indicate preference for one process or the other. That is to say that individuals who state a preference for extroversion do have the ability to relate to ideas as well as people and do so when the situation demands it.

How likely an individual is to act in ways opposite to his or her stated preference on the AirLand battlefield of the future is a valid question. Carl Jung's theory, on which the M-BTI is based, would suggest that this is not a likely outcome; however, it is possible, and rather than selecting one particular type to do any job, the organization should spend time and energy on such things as individual self-awareness, awareness of organizational needs in various jobs and situations, and knowledge of what must be done to narrow the gap between these two. Such an application of the M-BTI has the potential to markedly improve the organization and to make maximum use of the considerable talent available today in the Army.

COL. EMILE A. ROBERT JR.
Washington, D.C.

Army Scholarship Program

■ We at the Reserve Officers' Training Corps (ROTC) greatly appreciate the fine coverage your magazine gave our basic camp in the September issue ("Cadets Are Able, Tough, Motivated"). Bob Hubbert did an excellent job in capturing the flavor of the rigor and challenges the training offers prospective members of ROTC.

There is one minor point in the story I would like to clarify. It deals with the basic camp scholarship program as discussed on Page 38 in the paragraph which begins "The students, both male and female . . ."

This paragraph could be interpreted to mean that all students who complete basic camp and are considered "officer material" are awarded scholarships. This is not really the case.

During 1985, a total of 3,669 students attended basic camp. Of this total, 3,245 successfully completed the training. When final figures are compiled, we expect that some 2,000 will have signed contracts to become members of the advanced course of Army ROTC, starting with Military Science III.

All who will have signed contracts are considered to be "officer material" by virtue of being offered the opportunity to "contract" with ROTC. Of that total, however, only 495 have been awarded scholarships. In addition, not all who complete basic camp compete for scholarships; only those who specifically request consideration for awards are evaluated by the blue-ribbon panel of Army officers and experts referred to in the article.

I feel the publication of this story will greatly enhance the understanding of the basic camp concept but did feel it necessary to clarify this one point.

MAJ. GEN. JOHN P. PRILLAMAN
Deputy Chief of Staff for ROTC
Ft. Monroe, Va.

■ "Cadets Are Able, Tough, Motivated" (September) by Bob Hubbert describes the spirited competition of men and women at ROTC basic camps. The reward is the Army scholarship which is the foundation for a career in the Defense Department, as well as in civilian life afterward.

The article only describes one side of the coin, that of the military soldiers. But the scholarship for higher education also holds true for the civilian who chooses a career with the Defense Department.

As one who is already retired from the Defense Department, I am proof that the scholarship exists and is provided to just about anyone who wants it. My story is no different than that of many of the engineers who enter the Civil Service and go to work for the Defense Department.

After graduation from college, I went to work for the U.S. Navy in Brooklyn, N.Y., as a research and development engineer. At night, I started taking courses toward a master's degree in electrical engineering. As I worked, what I owed the Navy for my courses was paid off. Shortly after I received my degree, completely paid for by the Navy, my education obligation was paid off. I had a master's degree in electrical engineering and opportunity for advancement.

In 1973, I went to work for the Department of the Army at Ft. Monmouth, N.J., and once again I started taking courses paid for by the Defense Department, this time toward a master's degree in computer science. With the increased education, I received more and more challenging work to the point that I was able to generate my own work.

I worked on the most highly classified, as well as most interesting, projects in the Defense Department. I traveled and represented my facility at conferences and symposiums competing with the best of industry.

I have been published and have received letters of commendation from both the Army and Navy. I have patents and papers to my credit, and today I am recognized as an expert in my field. Today, I am retired at a relatively young age with a good pension and limitless opportunities.

If there is anything to which I can credit my good fortune, it is a good education and hard work.

MARVIN SCHWARTZ
Kingston, N.Y.

Good Decision on Specialist Grades

■ The defense by Col. T. G. Quinn, U.S. Army, retired, of the specialist grades ("Letters," September) deserves a response from one of those he feels should have been consulted before eliminating these grades: a battery commander.

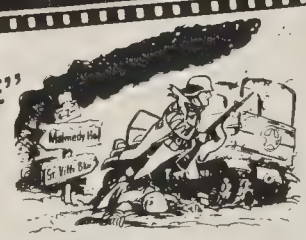
In my short time in the Army, I have seen several NCOs who should have been specialists but were not because they were promoted to nonspecialist grades or held positions requiring NCOs. These soldiers were poor NCOs because they and the Army had not placed enough emphasis on developing their leadership abilities. The Army needed either to carry specialist grades through specialist nine or eliminate them. It has chosen the better course.

I do not have the high NCO density Col. Quinn describes in a tank company. Of my soldiers, one in four is an NCO. Five belong to military occupational specialties which formerly used a specialist five at the E5 level. All of them became

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>
> **The Editors**

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hard stripe at the E6 level because of the requirement to lead troops. Why should they be denied the opportunity to learn this as a sergeant instead of being expected to know it as a staff sergeant? Additionally, three of those five were made sergeants because there were no staff sergeants above them. This forced them to exercise leadership early, helped them develop professionally and enhanced the performance of the battery.

The other two did not fare as well. The motivated specialist fives usually made good staff sergeants. The ones that enjoyed their specialist status did not. Their job performances as specialist fives may have been identical, but their performances as staff sergeants were not. The specialist grades created slots which sheltered soldiers from their true duty, leading other soldiers. This delayed discovering and educating the weak until they had fallen far behind their peers.

The specialist grades have outlived their usefulness. In an era when the battlefield knows no boundaries, it makes sense for every soldier to be a leader. The time has come for the former specialists to soldier, not specialize.

CAPT. JAMES P. CUMMINGS
APO New York 09139-0396

■ Col. T. G. Quinn, U.S. Army, retired, offered his opinion on several points in his letter to the editor in the September issue of ARMY, but offered his rationale on only one—the abolishment of the Sp.5 and Sp.6 ranks.

I counter with the fact that the decision was based on decision papers that were far more exhaustive in arguments than his letter contained. I think the decision is a case of "better a half-assed decision now than a perfect one never." Until there is a better solution, I will support the present one.

The other issues he raises—the eligibility of command sergeants major to make intelligent recommendations to the commissioned officers on matters concerning the enlisted force, that most senior NCOs subvert the chain of command," that newly commissioned officers (platoon leaders) have more knowledge of enlisted matters than the most senior NCOs, his view that there are an overabundance of E8s and E9s and the accusation that a number of high-ranking officials are ignorant of the relative rank of an E8 or E9 in comparison to company and field grade officers—beg for a more learned presentation.

It saddens me to see a comrade in arms, with no supporting argument, take such a wide slam at his fellow professional soldiers.

CSM EUGENE H. COLVER
U.S. Army, retired
El Paso, Tex.

Location of Ft. Rucker

■ I just received the 1985-86 *Green Book* and was disappointed to see an error in the section on U.S. Army Posts and Installations. The error was related to the location of Ft. Rucker as being ten miles west of Enterprise, Ala. Ft. Rucker is actually located entirely within Dale County, and the entrance on State Highway 249 is directly adjacent to the City of Ozark corporate limits.

This may seem a minor problem to you, but it is most important to the people of our community. Ft. Rucker is instrumental to the economic climate of our area, and we truly appreciate the excellent leadership and personnel who contribute to our communities in the entire area. Ozark traditionally and historically is referred to as the "home of Ft. Rucker."

We feel that our city should be recognized, along with the other communities, as the location of this fine military installation.

BILLY J. BLACKMON
Mayor, Ozark, Ala.

The Generation Gap

■ How nice it was seeing that old Marlene Dietrich's mother story ("82nd Airborne: Friend in Need," September) in your excellent magazine. When Ivan Woods was trying to put together some press materials for the big 82nd reunion in Houston, Tex., he asked me for that one—and nobody picked up on it. One of the talk show hosts, as I recall, turned it down as an interview suggestion by saying: "Who's Marlene Dietrich?" But it is likely that quite a few of your readers will remember how special she was.

I had my comeuppance a few days ago on a TWA flight, when the young stewardess came up, looked at me soulfully, and said: "Would I ever like to take you home with me—and introduce you to my grandmother!"

That put me in the same league as Gen. Douglas MacArthur in the story told at his 79th birthday party about how he had gone back to Manila and looked out of the window as the plane landed. A long red carpet was being rolled out, and he felt so young, and then he went down the steps to be greeted by a beautiful 16-year-old Filipino girl who said: "Welcome to Manila, Gen. MacArthur. Have you ever been in the Philippines before?"

COL. BARNEY OLDFIELD
U.S. Air Force, retired
Beverly Hills, Calif.



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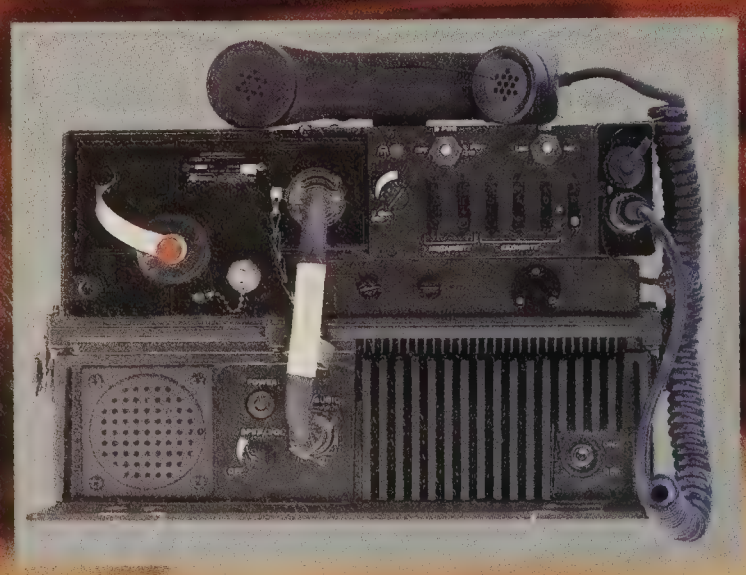
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There Are Pitfalls in Blind Adherence

That Uncertain Watchword, 'Positive Attitude'

By Capt. Harry F. Noyes III
U.S. Army Reserve



One unfortunate feature of American military tradition that damages the preparation of our military leaders at all levels is an obsession with a poorly conceived and grossly misunderstood concept called the "positive attitude."

In the name of this false god, countless battles have been lost, lives sacrificed, dollars wasted and valuable soldiers so badly disillusioned that they left the service in disgust and sorrow.

Front & Center

Whether or not Lt. Col. George A. Custer actually said, "Don't take any prisoners, men" during the Battle of the Little Big Horn, his blind refusal to accept reality and his decision to attack a vastly superior force head-on out of misplaced confidence—or, more accurately, unbounded arrogance—make him a classic example of the evils of this positive attitude syndrome. Our military history is replete with other less famous, but equally tragic (or just plain banal), examples.

Is this to say that there is no place in military doctrine and folklore for the ideal of surmounting overwhelming odds through spiritual fortitude and moral power?

Of course not. Such achievements do occur, with inspiring—indeed, almost incredible—frequency. They have a hallowed place in military history, and rightly so. The sturdy courage of troops and leaders has often been the critical difference that turned the tide of material factors on many fields of battle. It will be so many times again.

What is false in our current folklore is that the emphasis has come to be placed on the wrong kind of positive attitude. Instead of referring to the spiritual toughness, resiliency and fervor needed to overcome unfavorable odds, the term has come to signify a mental blind spot: a refusal to even recognize that unfavorable odds might exist.

Ignoring the existence of negative factors and refusing to listen to people who point them out result in head-on charges against impregnable obstacles. Armed with a positive attitude, some people beat their heads against a brick wall until they are senseless. If they were just a little less positive minded, they might look up and see the doorway a little further along the wall.

A good, if prosaic, example of the damage done by the positive attitude syndrome occurred during the Vietnam war. A conscientious young officer downgraded the pacification status of a village and ended up spending all his time responding to higher headquarters' angry demands that he justify his action.

The officer told a reporter he would never again downgrade a hamlet, no matter what happened. Thus, the positive attitude syndrome damaged leaders' ability to acquire accurate information for managing the war.

Such effects are most dangerous in wartime, of course, because they get people killed. But they are harmful in peacetime, too, because they waste material resources, and, above all, they waste people.

Leaders with the positive attitude syndrome burn people out and drive them out of the service. They demand more from people than is reasonable because they refuse to acknowledge that there are limits to what human beings can achieve with their far from infinite spiritual resources, especially when other resources are in short supply. These are the leaders who insist on trying to do it all, instead of setting priorities and focusing on essentials.

In wartime, the adrenaline factor, the extreme and unquestioned urgency of the mission and the (usually) more generous material and moral support from the home front combine to let people do more than is normally possible. Even in wartime, however, there are limits. Troops have been known to fall asleep on exposed ground with enemy bullets kicking up dust all around them. Psychologists say battle fatigue is inevitable for all soldiers in protracted heavy combat unless they get shot first.

If such boundaries exist even in the excitement and dedication of war, it should be obvious that in peacetime there are even greater limitations to what people can take. In fact, in peacetime, people do not accept the legitimacy of outrageous demands and will not put up with them. They will reject overly demanding leadership long before they reach the actual outer limits of their spiritual capacity.

There are two measures of leadership. Accomplishing the mission is one. The other, often overlooked, is preserving the team for future missions. The leader who accomplishes the mission by sacrificing his unit is (with rare exceptions) simply not a successful leader.

Whether that sacrifice takes the form of wartime casualties or peacetime burnout, the judgment is the same: the leader who destroys his organization to get results is not doing the job right.

Unfortunately, the military personnel and training systems inadvertently encourage such damaging attitudes and behavior in leaders.

First, the doctrine and, above all, the folklore of the training system stress the positive attitude value system in all its worst manifestations. The idea is assiduously cultivated and handed down to each new generation of soldiers.

The personnel system, especially the evaluation system, then reinforces this trend. Many evaluators judge people by how "positive" their attitudes are. Thus, we systematically promote a certain percentage of leaders who have a dangerous

blind spot to limits, while we punish more realistic leaders for being "too negative."

Also a factor is the short time that most leaders spend in any one organization. Things might be different if every leader knew that he had to live with the results of his actions for an extended period. As it is, a selfishly ambitious or simply unimaginative leader can come into a unit, drive it into the ground to get good short-term results and then get promoted to some coveted new job—amid much praise and admiration—before the chickens come home to roost.

Most of the leaders who do this do not intend to wreck units. That effect is an inadvertent result of their officially encouraged ambitions to get fast results.

The positive attitude syndrome blinds the leader to the limitations that cause the burnout to occur, and it blinds higher-level leaders the same way. They are mystified by the wreckage they see in his wake because they, too, are constitutionally unable to acknowledge that he exceeded limits: they tend to blame the new leader, the poor guy who has to rebuild the unit the "fast-burner" wrecked.

In addition to the human costs, the failure to acknowledge limits also causes a great loss in effectiveness and efficiency.

The positive attitude syndrome keeps us from finding better ways to carry out our missions. To improve ourselves, we must admit that we are not yet perfect. Despite lip service to the contrary, admitting imperfection is something no true believer in the positive attitude is capable of doing.

To suggest that current policies are flawed is to have a negative thought, and that is anathema to these people. They take pride in never having such thoughts themselves, and they will not tolerate, much less listen to, anyone who does. (Positive attitude adherents tend to be inveterate "messenger shooters.")



Organizations dominated by positive thinkers tend to get overextended because the leaders will not admit that there is any such thing as too much. To make matters worse, because positive thinkers rarely set priorities (that would imply an admission that they cannot do it all), the most critical matters are just as likely to be neglected as the trivial ones.

More realistic people study obstacles and usually find cheaper, easier ways around them—a process that presupposes the ability and willingness to see the obstacles. Such coping is totally beyond the capabilities of the fanatic positive thinker.

In short, a positive attitude renders one measurably inferior in problem-solving capability to one's allegedly negative-thinking counterparts, because the positive attitude precludes any possibility of accomplishing the first step in problem solving—defining the problem.

How can we cure this positive attitude syndrome?

The first step is for military leaders, trainers and writers to recognize the pernicious effects of that ambiguous terminology and promise never again to allow the words "positive attitude" to escape their lips or pens.

We must seek more specific affirmative terms to express the attitude we want to foster. There are many candidates: for example, "determination," "fortitude" and "mission-oriented drive."

The military should continue to emphasize that refusing to give up, even in the face of the most daunting odds, leads to complete success and survival in an astonishing number of cases—and, at the worst, often buys precious time or other advantages for the cause defended. Soldiers and leaders must always be trained and motivated to meet such challenges with insuperable courage.

We must also be sure, however, to emphasize that such obstinacy should be clearly regarded as a last resort, to be used when all other options have been intelligently and imaginatively explored and found to be futile, not as a blind response to every contingency.

Finding a way to sneak around obstacles instead of crashing through them is not a sign of moral weakness. On the contrary, it is the highest form of the military leader's art. Why would we bother to educate and train officers and NCOs if their only function was to lead *banzai* charges (literally and figuratively)? The military has lives in trust, and false *élan* is not a virtue.

In our doctrinal writing and folklore, we must plainly disavow the Little Big Horns of our history. Let us embrace the ample examples of the right kind of firmness, for example, the Battle of the Bulge, where determination *without illusion* brought victory.

There are plenty of heroes on the right side of the scale. The Marine colonel who said, "Retreat, hell! We're just attacking in a different direction!" during the Chosin Reservoir retreat was not being cavalier. He was making a virtue out of an unavoidable necessity. That is quite different from the positive attitude crowd's habit of making a necessity out of a dubious virtue.

We can also improve the situation by fully developing all of the new personnel stability and unit cohesion measures. One important but unheralded benefit of those measures is that they discourage the "use 'em up and dump 'em" attitude that the old short-tour system fostered in some ticket-punching "leaders."



Leaders who stay with their units for longer periods will care more about their people and about team building and preservation. Their own interests, as well as their closer acquaintance with their people, will assure this, because they will be around to see their chickens come home to roost.

In this connection, it is illuminating that, in my experience, the reserve components seem to suffer less from the positive attitude syndrome than active forces do.

This may be partly because reservists live and work in the civilian world, where limits and realities are made brutally clear every day. It may be partly because they are used to working with very limited military resources, especially time. It may be partly because reserve leaders must deal with hard-to-intimidate subordinates who do not stake their entire careers on the military.

Most of all, however, it may be because reservists commonly spend either their entire careers or very substantial portions of them in one unit or command. The reservist knows he will be around to take the consequences of his actions.

Being able to tell which situations call for retreat or maneuvering around obstacles and which ones call for an obstinately heroic head-on assault takes sound, mature, imaginative and, above all, realistic judgment. Such judgment is only hindered by semantic confusion arising from platitudes about positive attitudes.

The term "positive attitude" has outlived whatever usefulness it ever had. We should think about the subject in new, fresh terms that do not prejudice the outcome of our thought or confuse the young soldiers we are teaching. □

CAPT. HARRY F. NOYES III, U.S. Army Reserve, has served on active duty with the Air Force in the United States, Vietnam and Japan. He is the supervisory editor of the Wiesbaden Post *newspaper, Wiesbaden Military Community, West Germany.*

Senior Raters Not Keeping Up With Changes in OER System

By Maj. Scott R. McMichael

After five years of use, evaluation and minor change, the new OER (officer evaluation report) system can safely be graded a true success. Few serving officers would disagree with the statement that the current OER is a quantum improvement over the rapidly inflated report systems of the past.

For the first time in many years, the reporting system permits meaningful discrimination among performances of duty. More than any other change to the OER, the innovation of the senior rater profile (with supporting comments) is responsible for the improvements in the evaluation system.

So fundamental is the change introduced by the use of the profile that the senior rater has eclipsed the rater in importance in terms of how OERs are considered by selection boards. The rater's evaluation is now viewed as a means for counseling and development, not as a decisive measurement of performance.

The senior rater, on the other hand, has the capability for comparative evaluation of each officer that he rates through the profile, coupled with his narrative comments. The Army Military Personnel Center (MILPERCEN) freely acknowledges and officers in the field understand that the senior rater section of the OER form is the single most important section on each OER in an officer's file. In effect, senior raters are now essentially in command of the rating system.

While some may criticize this turn of events, it cannot be disputed that the new system has significantly increased the responsibility of the senior rater to the officers whom he rates. Senior raters in general, however, have been slow to realize the full extent of their increased responsibilities and have not fulfilled those responsibilities to the proper degree.

Obviously, the first responsibility of the senior rater is to establish a meaningful profile based on a spread of box-checks over a number of boxes. MILPERCEN recommends that senior raters establish a center of mass in the three- and/or four-box, with exceptional and below-average officers marked (relatively sparingly) above and below the center of mass, respectively.

Most senior raters understand this requirement and have responded properly to it. Some senior raters whose profiles are out of balance have been contacted by MILPERCEN and encouraged to restart their profiles.

One can only applaud this policy while noting that senior raters whose profiles are not in balance are probably damaging the professional advancement of their subordinates. Fortunately, the management of profiles appears to be generally on track.

The responsibilities of senior raters, however, go far beyond the maintenance of balanced profiles. There are three main areas where I believe that they are missing the mark.

The first area is the responsibility of the senior raters to take the time to know thoroughly the many officers they rate. Given the strong credence which selection boards give to part VII of the OER form, it behooves senior raters to make a determined effort to observe their subordinates personally and critically on a frequent basis.

It is no longer acceptable that a senior rater base his evaluations on infrequent contact based on chance. He must seek out opportunities to make personal evaluations of officer performances.

The senior rater must also engage in periodic discussions with raters regarding the performance of their mutual subordinates to obtain a balanced picture of the rated officer. A senior rater who fails to make the effort to really know the officers whom he rates endangers their careers through OER guesswork.

I believe that senior raters in staff positions generally enjoy the frequent direct and indirect contact with their subordinates necessary for fair evaluations. In my experience, the body of officers who seem less likely (because of the demands on their time) to obtain thorough knowledge of the capabilities and qualities of their subordinates are commanders at the rank of colonel and general officers.



"I want you to be completely impartial—don't give this man any special breaks you wouldn't give any other son of mine."

Too often, when it comes time to senior rate, officers in the latter group rely on statistics, reports and other outside evaluations, rather than their own personal evaluations.

The second area in which senior raters fall short is their responsibility to brief the officers they rate. Over the years, in many discussions with other officers, I have been left with the strong impression that most senior raters do not make it a practice to call in their subordinates for a formal or informal briefing after the OER.

In my own experience, I have received six reports under the new system, but only one of the six senior raters discussed his comments with me. Many rated officers never even see the box-check and comments of the senior rater until after either they or the senior rater has left the command.

Now that the senior rater evaluation has become so important, it is imperative that senior raters make time to go over each OER personally with each officer, explaining the basis for the evaluations.

Third, senior raters must accept the responsibility to tell rated subordinate officers where they fit on their profiles and why they have been placed there. It does an officer no good for a senior rater to mark him in a certain block unless he knows how he comes out overall on the profile. A rated officer should not have to wait 45 to 60 days to find out from MILPERCEN that the two-box, which the senior rater assured him was a good mark, actually placed him in the bottom half of the profile.

To do this, of course, requires senior raters to keep track of their profiles and to have them handy each time they brief an officer on the OER. It also requires them to exhibit the moral courage to look officers in the eye and justify their evaluations to them. Far too often, senior raters cannot tell the rated officer where he stands on the profile, thereby avoiding the sticky issue entirely.

At the present time, senior raters as a whole are not serving their rated officers as well as they could and should. □

MAJ. SCOTT R. McMICHAEL is an artillery officer assigned as a research fellow, Combat Studies Institute, U.S. Army Command and General Staff College. He has served in Alaska, Ft. Bragg, N.C., and most recently in West Germany.

Reflections on an Army Career

Call to Military Service Began With Impressions from Youth

By Maj. Gen. Edward B. Atkeson
U.S. Army, retired

The other day a friend of mine asked me how I happened to become an Army officer. I gave him my well-developed story: youthful rebellion against a Navy father, three Naval Academy uncles and a string of seafaring forebears stretching as far back as my grandmother could recall. He chuckled, but did not believe it any more than I do, and pressed me further.

Although not normally given to great introspection, I told him quite honestly that I suppose I am in part the product of some unusual youthful impressions of military life.

My father was assigned to the Asiatic Fleet in 1938 where he became the skipper of the destroyer *USS Pope*, one of the old "four-stackers" of the "Pifteenth" Division (so known because three of its four destroyers had names beginning with "P"). That ensured that he would be off to Australia or some other place where I would get minimal exposure to the Navy.

My brother and I were packed off to boarding school in northern Luzon in the Philippines for a good bit of each year, but the summers were spent following my mother along the China coast from port to port while she, somewhat more nimbly, followed the fleet. Tsingtao, on the Shantung Peninsula, became our principal roost.

Traveling separately, my brother and I would usually take a small Dutch steamer from the Philippines to Hong Kong and from there to Shanghai. In contrast to other ports, we found Hong Kong always dressed for war, with elaborate camouflage over its oil tanks and other vitals. Long antisubmarine booms would slowly swing open, allowing our ship and others gathered at the gate to enter or leave the harbor. It was a city preparing for siege.

After a day or two, we would press on for Shanghai. It was only from there that we could catch one of the Japanese troop ships which carried passengers further up the coast. Shanghai had already had its baptism to war. The Chinese sector was in shambles from Japanese bombing, with pitiful people stumbling about in the wreckage. My brother and I would gaze in some wonder at the handiwork of modern military machinery as our ship would ease into the port.

The International Settlement in Shanghai had not been touched. It was a well-developed metropolis with tall buildings and "godowns" (warehouses) along the "Bund" (the semicircular quayside complex of the settlement). We were happy that the French had fine-looking armored cars and the British had a Scottish garrison with a splendid full-dress band to soothe our apprehensions about the terrifying conqueror from the islands to the north.

Our apprehensions would reach heart-pounding proportions as we boarded one of the Japanese vessels—always with a name ending with "Maru." (I never did find out what that meant.) We traveled not uncomfortably. I usually preferred a carpeted floor to a catcher's mitt bunk, but the food was palatable and there were always a few other Western children on board.

It would be some time after we left the mouth of the Yangtze River that the toilets would stop flushing with the muddy river water and finally go clear. From then on, the purser would carefully post our progress on a wall chart as we proceeded up the coast.

In the hold lived the troops who perturbed us so. They wore little more than loincloths, but were clean and friendly and had fascinating rifles and packs and little white slippers with a separated big toe. We supposed these were for climbing trees to snipe at the enemy. They seemed pleased to see us and must have made great jokes at our timorousness because there was always great laughter when our courage would cave in and we would scramble off up the passageway.

Traveling with us in first class were the staff officers with their elegant boots and spurs, *aiguillettes* and *samurai* swords. Most were preoccupied with their own concerns, but one or two professed a desire to learn English.

One was particularly persistent, and once he had cornered one or the other of us he was disinclined to release his reluctant tutor until he had added a dozen or more words to his vocabulary. In return, he would give us unintelligible lessons in a game played with different colored kidney beans on top of a chopping block.

Most terrifying was the night my brother lost our passport. The purser solemnly advised us that no debarkation was possible at any mainland port without it, and that we could expect to remain on board until the ship returned to Japan. "There," he announced somewhat officiously, "your case will be resolved by proper authorities."

We knew all about arrival formalities in Japan. Bowel specimens were required of all foreigners, and adults were limited to 18 cigarettes each. Of course, neither of these would have pertained to us. We did not smoke, and had the document not been recovered by a crewman—under rather mysterious circumstances "in a passageway"—I am sure we would have been constipated throughout the rest of the voyage.

Tsingtao was one of the few cities which had not suffered extensive damage. It had been the capital of the German-fortified colony of Kiaochow Bay from before the turn of the century. The Japanese captured it in 1914 in the name of the Western Alliance and then returned it to China in the amicable days of the 1920s.

In January 1938, about six months before I first saw it, the Japanese stormed ashore again, this time under cover of the Berlin-Tokyo Anticomintern Pact and Japan's efforts to build a "greater East Asia coprosperity sphere." The German residents ostentatiously draped their houses and stores with swastikas and pretended to enjoy the protection afforded by the troops of an ally.

That first summer we lived in the relatively modern Edgewater Mansion Hotel. While the building was given over primarily to Western guests, members of the higher echelons of the occupying authority were often in evidence in the common rooms. They were splendid in their gold braid and steel-heeled boots, which snapped smartly as they strode about on the ceramic floors. They always had gleaming staff cars with pennants on the fenders waiting for them at the front door. The cloak room looked like an arsenal with swords and pistol belts hanging in little groups on the walls.

The hotel had a fine beach, but one had to be careful to avoid the dreaded "Tsingtao tummy" to which each of us succumbed at least twice. While I never heard a satisfactory explanation, I understand it had something to do with the sun and microorganisms in the water. A swim followed by a period of relaxation on the beach was sure to produce a violent plumbing disorder the next day.

The same activity in reverse order, followed by a shower and dressing, would ensure avoidance of the disease. We would take secret delight in pointing out newly arrived Japanese officers pursuing the former regimen and imagining their discomfort on the morrow.

Adjacent to the hotel grounds were the largest of the city's elaborate fortifications, somewhat the worse for wear under successive Japanese assaults.

I suppose the Maginot Line must have appeared much the same after the fall of

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France two years later.

There were large steel turtle-backed gun emplacements, underground ammunition railways, searchlight hangars, troop barracks and kitchens. We imagined that the barbed wire entanglements had been electrified and believed the tale about a streetcar in downtown Tsingtao which had caved in a tunnel leading from these fortifications to the hills behind the town. We clambered everywhere, cranking the guns, imagining that we were the defenders, holding off the very foe which had so recently triumphed for the second time.

Seldom, however, were we able to get away without becoming self-conscious subjects for Japanese propaganda photographs. Soldiers would gently insist that we pose beside the useless bunkers holding banners with Japanese characters and smiling as though we understood what it was all about. I suppose they mistook us for Germans and thought we should show some appreciation for our liberation from the "criminal" Kuomintang regime.

I often wondered who would read the banners I held and what conclusions they would draw from my squinting grin.

The next year, we settled in an Irish boarding house just across the inlet from the fortifications. The proprietor, a friendly woman of substantial proportions, managed the staff: a "number one" boy, a "number two" boy and innumerable coolies. The nameless but numbered boys appeared to be real people with thoughts of their own and a sense of identity. The coolies were a faceless group of Chinamen with sinewy muscles in blue pajamas who opened their mouths only for an occasional grin, displaying their crooked dentistry.

Seewah was the exception. Seewah, the rickshaw boy, had a name and the most sinewy muscles of all. He also had a cricket in a wooden cage hanging on the back of his rickshaw. The cricket was a theft alarm. It would chirp merrily while alone and stop suddenly if someone approached the vehicle.

Seewah kept the rickshaw in immaculate order and the brass lantern highly polished. No Westerner ever rode in a public rickshaw; the local wisdom was that the Chinese would haul their dead to the burial grounds in public rickshaws, and one was bound to contract cholera or dysentery from a ride-for-hire.

Life and death never seemed very far apart in the native population. One day I had to dismount my bicycle to steer around an elderly beggar who had seen his last just a short way from our front gate. I was relieved to note later on in the day that his body had been removed from the curb where he had died.

The balcony of the Erin House afforded a much better view of the routine of the garrison troops than we had had before. The barracks were situated about a half mile to the north, while the training ranges were about the same distance in the opposite direction.

Small detachments would march past according to some unpredictable schedule. The soldiers would carry their full field gear with greasy bayonets on their rifles and little white napkins attached to the backs of their caps to ward the sun off their necks.

They traveled the same road which was occasionally used by VIPs who had come to the occupied territories to inspect the troops. On such occasions, we would be cleared from the street by the police as part of the customary sanitation precautions so that we would not foul the air to be breathed by the visitor. Even the police and military route guards would turn their backs to the high-speed motorcade so that they would make no contribution to whatever pollution there might be in the air.

There were few restrictions to our movements about town. Occasionally, we would pedal over to the training area to watch the soldiers in their battle drill. No one seemed to take much interest in us. Only when a roadblock or checkpoint was established was there any cause for alarm.

A checkpoint could mean that something was in the wind. It was a regular part of the buildup for an anti-British day, a poorly disguised attempt at stirring a "spontaneous" protest among the Chinese against Japan's leading trade competitor.

Giveaway signals that the British were in for it would include Seewah's unexplained absence for a day or two or the closing of some stores. All doubts would vanish the day before the big event.

Posters depicting the Union Jack as a tentacled octopus enveloping the world would go up on every lamp post and wall, and inebriated locals would aimlessly ignite firecrackers and yelp at each other in the side streets. On the day, there would be a staged incident or two: chanting crowds, a grenade over the British Consul's wall, possibly a desecration of the British colors.

I cannot remember anyone being seriously hurt in any of the shows, but we were careful to stay indoors while a huge Irish flag swayed in the breeze over our gate. The next day the posters and roadblocks would be gone, and sweepers would have passed by before dawn, collecting the residue of the rubbish left by the crowds. The troops would be on their way to the training area on schedule.

My regard for the Japanese army was an odd mixture of fear and fascination, as one might contemplate a cobra in a basket: timorously but unable to resist a peek.

Never was this paradox more plain than the morning a squad of little Mitsubishi tanks came coughing and clattering up the street. The tanks had mean treads that dug into the pavement, kicking the stones about. Following the tanks were a dozen or more coolies, bent double, picking up the stones and packing them back into place.

Something must have happened to irritate the leading tank commander; at one point, he started waving his arms, apparently ordering a reverse course. His vehicle stopped with a lurch, turned around in its own length and clanked back 50 yards in the direction from which it had come, scattering the terrified coolies to the curbs like chickens.

Having made whatever point he had in mind, the commander again reversed course and resumed his deliberate advance down the street. The coolies stoically gathered themselves up and fell in behind the tanks again, picking up stones and patting them back into place.

I was fascinated with that army—fascinated and repelled. Its strength, its order and its military panoply were stirring and oddly attractive. Yet it was then, and would continue to be for half of the next decade, an instrument of aggression, inflicting human misery over thousands of miles.

I was too young to be of service in the Great War which followed, but it was clear that I had been inoculated with the strange piquancy of the military profession which is as old as time.

There is no parallel between the U.S. Army and that of imperial Japan; rather, if there is a relationship, it can only be described as one between mirror images: the one is quite the opposite of the other.

With all its evident faults, I am proud and deeply satisfied to have served in the former for over 33 years. The other, thanks to providence and great human sacrifice, is now only of historical interest. □

MAJ. GEN. EDWARD B. ATKESON, U.S. Army, retired, was national intelligence officer for general forces planning at Central Intelligence Agency headquarters.

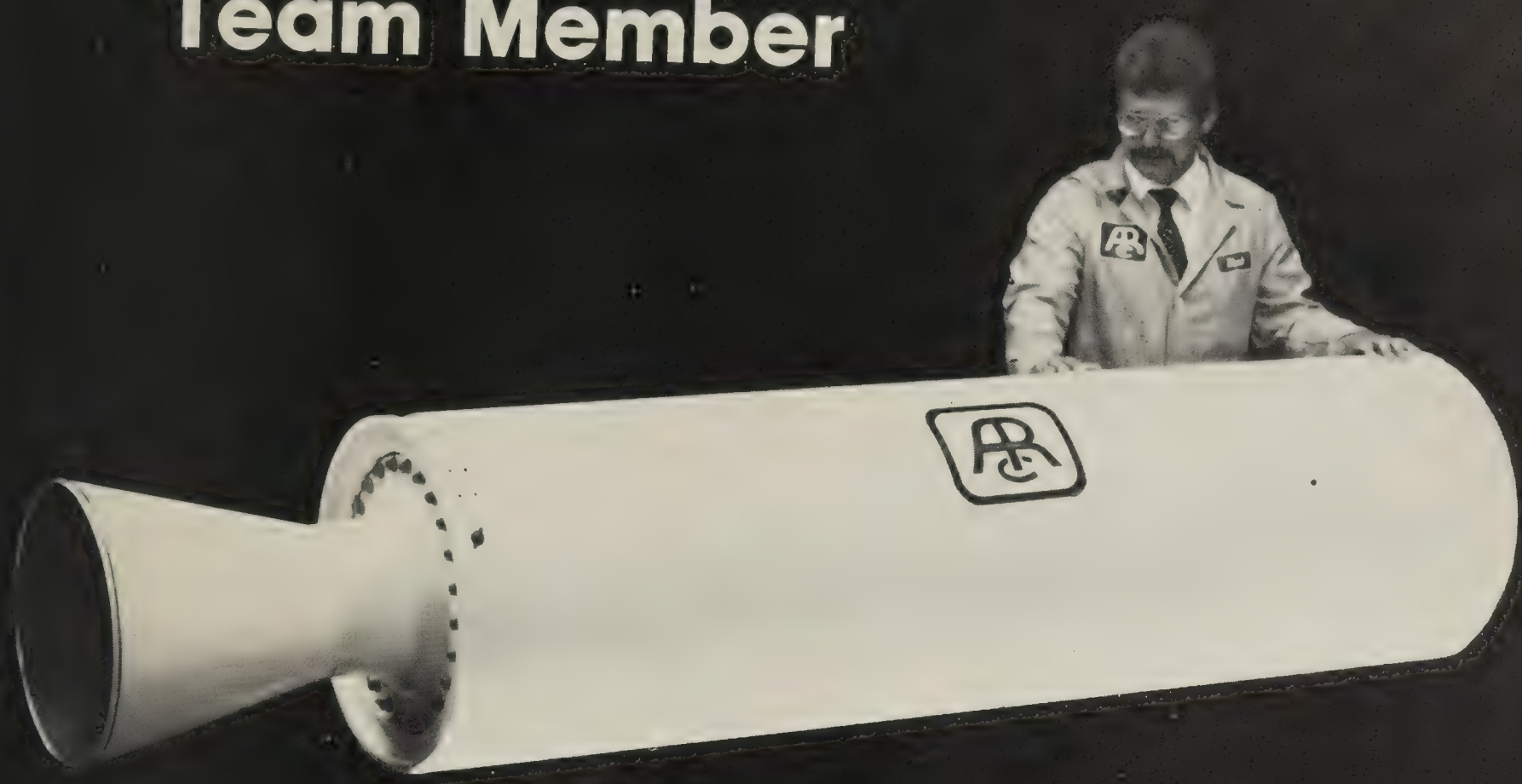
Corrections

Two errors in the 1985-86 ARMY *Green Book* have been called to ARMY's attention. In the "Command and Staff" section, Page 342, the commander of the Army Reserve's 361st Civil Affairs Brigade is Col. Albert A. Nettles Jr. In the "Posts and Installations" section, Page 362, under the Ft. Rucker description, the "Aviation Safety Center" should have read the Army Safety Center.

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The Subordinates

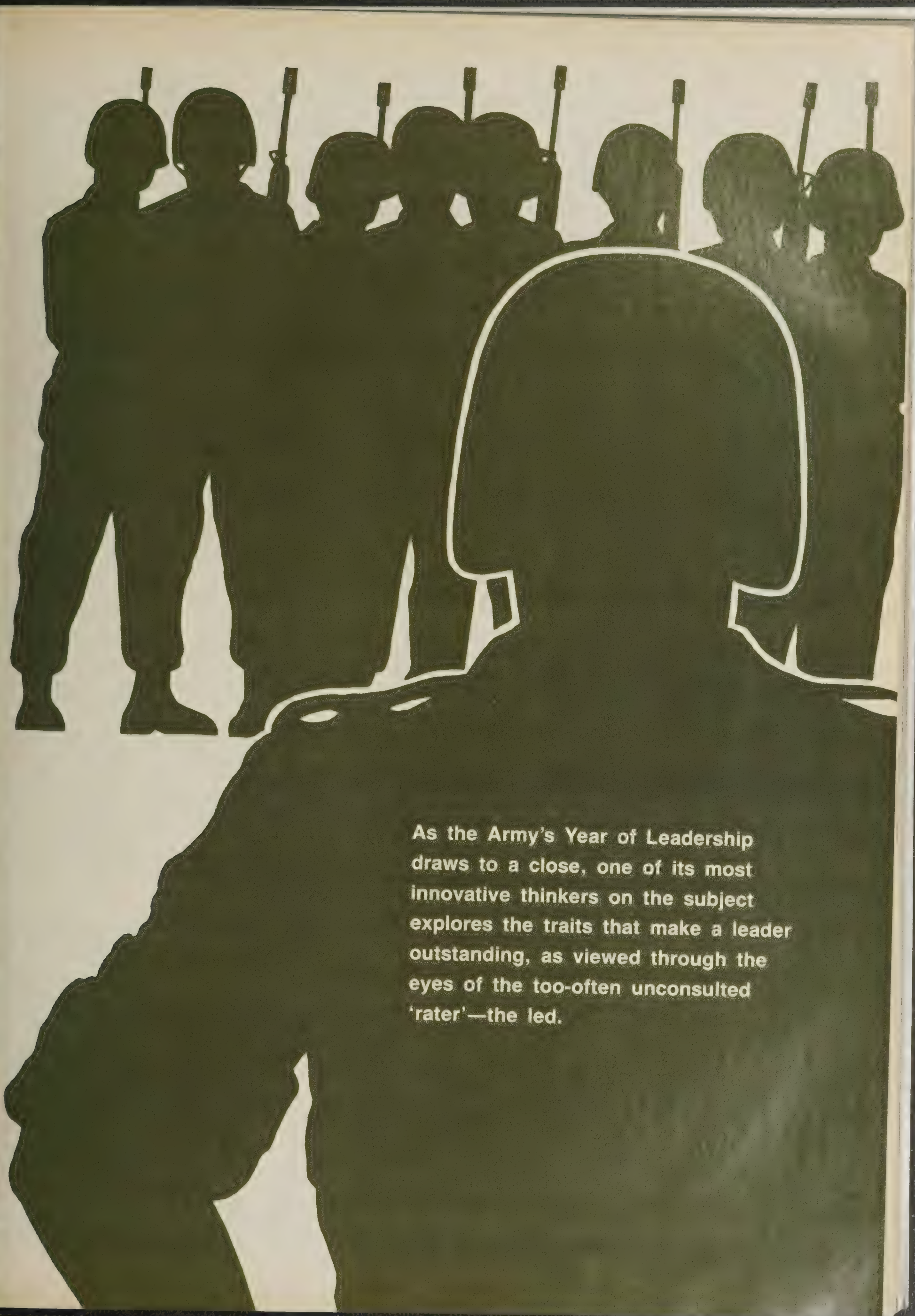
He's out there . . . somewhere, walking around among you right now. If you met him, as I did once, briefly, you would not really recognize what you were looking at—just another guy, with nothing special about him except, maybe, his eyes. You'd read him out as quiet, unassuming, modest—"average"—but then, if you got to know him better, or served for a while with him or somewhere around him, you'd see something pretty close to "awesome." What this guy does is lead. *He doesn't jog across lakes or feed a whole battalion with one sorry sack of those meals ready-to-eat. He is just one hell of a damn fine* leader *of soldiers.*

I think he's probably a lieutenant colonel, or, by this time, he could have made colonel, but he's out there among you now—today. I don't know where he is. He could be a commander or staff officer in a division or maybe a department director at one of the schools. He might be that guy two offices down the hall from you there in the Pentagon. He might be squirreled away somewhere in a major command headquarters or out in the hinterlands with the Recruiting Command or running an ROTC detachment somewhere. He could be your boss. He could even be . . . you!

It was about eight years ago when I first heard about him. He was a senior lieutenant or captain then, and I heard about him, strangely enough, from his peers. They were all running companies about that time, and in that case, you would normally expect a lot of competition, and "rooster behavior," and most certainly not many honest good words about one of their peers, but that was not the case with this guy. Those peers openly admired and respected this brother officer.

What I heard most when they talked about him was how much they learned from him, how willing he was to go out of his way to take the time to teach them about the things he did, how he did them and why, and especially about the time and attention he gave to his subordinates.

The next time I heard about him was about five years later. This time, it was his superiors—the generals—talking. He was a battalion commander by now and, at the National Training Center, he had led a battalion that had done things that were, in the generals' words, "incredible." Eight or ten battalions had gone through the NTC by then, and the OPFOR (op-



As the Army's Year of Leadership draws to a close, one of its most innovative thinkers on the subject explores the traits that make a leader outstanding, as viewed through the eyes of the too-often unconsulted 'rater'—the led.



'Leadership . . . just does not exist and is hardly worth talking about unless subordinates are part of the equation.'

posing forces) had routinely "destroyed" each one. His outfit was the first one that had decisively cleaned the OPFOR's chronometer.

A three-star pointed to the guy's officer evaluation report and said, "I've seen a hell of a lot of good OERs in my time, but never one as good as this. His troops do damn near unbelievable things and you ought to hear his bosses talk about him." The other generals nodded in agreement. They'd already heard the stories or seen the man—leader, warrior, teacher.

The last time I heard about him was a year or so ago from his subordinates. A young captain who had been in his battalion was talking with me about him: same guy—quiet, modest, no hype, but what a leader, what fire he could put into the soul of a unit, and what a lasting impact he had had on the lives of all those who served under him.

"Well, why don't you tell the Army about this guy?" I said. "We could do that," said the captain. "There are eight or ten of us here in the school that served with him, and we talk about him all the time, but he wouldn't like all that publicity stuff."

"What if you did not use his name?" I said.

"That'd probably be okay, and we'd sure as hell like to do it," replied the captain.

So, not long ago at a TRADOC school somewhere, these subordinates got together and dedicated a whole night and a couple more days just to the telling of the stories and the memories of their leader-teacher—a boss whose lessons of leadership had been burnt into their minds forever.

* * *

He understood the importance of trust among soldiers. The trust was there because the chain of command took care of soldiers and soldiers took care of soldiers. "Be your brother's keeper." We said that to each other, and we believed it and lived by it. We took care of one another, not because we read it in a book, but because we learned and knew that we are all in it together—the private, the sergeant, the captain and the colonel.

The trust was built over time. It came from doing things, not saying things. While he knew he could not take care of every problem personally, he did take on many. We were important to each other, and the unit was important to us all. From the trust grew intense loyalty to each other, to the squad, platoon, company, battalion, brigade, division, Army and our country.

The story was often told about two of our soldiers in uniform, picked up and given a ride by a staff officer from higher headquarters. He was in civilian clothes and did not identify himself as an officer. Recognizing the soldiers' unit, just for a joke, he challenged their loyalty with some derogatory comments about the unit, at which time the soldiers threatened him with a thorough whipping, made him stop the car, and then got out and walked. The officer got mad and next day wrote a report on their conduct. The report made its way down through channels, advocating punishment.

In response, the boss gave the two soldiers certificates of achievement and lauded their loyalty in a battalion unit formation. The staff officer from "higher" got a private session with the boss about screwing around with soldiers.

He always was sure of his abilities, and he had total confidence in his company commanders. He would always stress this to his leaders: "Even when things seem to be falling down around you, don't you let your soldiers sense it, or it will run rampant through your command. Never look worried. Be concerned, for sure, but don't even *look* worried."

I remember the first operation at the NTC. It was a movement to contact, and we took a pretty good licking. He never transmitted any feeling of despair. There was no doubt in our minds (and I mean every soldier) that with him at the lead, we would win, and for the next 13 days, we beat them. He might get "concerned," but never "worried." This came through loud and clear, to the whole command, from his positive attitude and continuous communication with his leaders and his soldiers.

Communications kept us tight and thinking alike. He talked to the soldiers at least once a week, and sometimes more, when he sensed the need. He didn't tell us what was messed up—he told us how well we were doing. That's not to say if something needed improvement, it was neglected, but it always came after the good stuff. "Got to tell the bad with the good," he would say.

But he made the good always greatly outweigh the bad. There wasn't a man in that unit who couldn't list all the accomplishments of the unit. He'd say to them, "Here's a little beer talk," and then list all our accomplishments. And there were personal accolades handed out. He was always recognizing two or three soldiers or NCOs or officers. I'm not talking about a formal awards ceremony (we had those at least monthly). I'm talking about Jones on guard, who, at midnight, gave him a superb challenge; or S.Sgt. Smith, who had just been selected for an advanced NCO course because of his outstanding performance; or Capt. Brown, who did such a great job organizing the unit trip.

The talk was not just about what had just happened or what was going to take place next week. There was teaching interspersed with per-

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COL. DANDRIDGE M. MALONE is a retired infantryman and former Army War College instructor who is widely known in military circles for his writings on leadership.

sonal stories. He would talk about the American Dream, how we would all be successful, and how anything was possible through teamwork, hard work and just "doing the right things for the right reasons."

There was other communication. There was an open door, always open, late at night, and on weekends and holidays. The chain of command was there, too, and this was a good "pressure valve" soldiers could use. Not too many did, and many times when they came up the chain, it was not always because of a problem. Many just wanted to be closer to him or seek his wisdom or guidance.

Finally, there was always communication among the commanders and the staff. There were the usual formal meetings where needed information was passed out but, more important, there were informal "command and staff meetings" where he was teaching and training, and we were getting information and insight about his concept of command and his overall intention and objective.

We knew how he thought, we understood his priorities, and we knew they were right. We worked as a team, often in the absence of orders or guidance, because we knew what needed to be done, and this we learned from him. It went beyond garrison into the field. Commanders, when communications were lost, would move out, and the staff would support.

There was never any one-upsmanship among us. We learned to think together, and to operate together, as a team, to accomplish the mission. We were loyal up, down and across. He communicated continuously through word and example and always with that ever-positive attitude.

We had a lot of fun as a unit. I guess the good spirit that prevailed was in large part due to the cohesiveness of our unit, our sense of belonging and the knowledge that we were the best. There were a lot of activities, but he always made sure soldiers got time off for doing good.

We had the usual unit parties and organization days, but regularly we used to pack up the whole unit—wives and children, too—and travel to a large city for a weekend away. It would usually include an overnight at a good hotel, a major league ball game and maybe a day at an amusement park. A soldier could go for $20 (transportation, hotel, ball game, amusement park). We never had a single incident or a single soldier who failed to come back. They knew it was a good deal, and they would not let the unit down by screwing it up. We took care of each other.

He had an uncanny ability to go for extended periods without sleep. He understood the importance of rest and had somehow learned to take short, ten to 30 minute catnaps and awaken fresh and clearheaded. The lack of sleep might be evident in his bloodshot eyes but never in his mannerisms or his ever-present positive attitude.

The soldiers knew he took no special favors. When fighting, he was always as dirty, as sweaty and as tired as they were. He was visible to them, and they knew he was there, sharing all the hardships they were enduring.

I recall once asking if he needed some help carrying his gear to the tactical operations center. I guess we were about five days into the exercise at the NTC. He said, "Thanks," but that a long time ago, a guy he thought a lot of had taught him to "carry his own roll, dig his own hole." He didn't say it to make me feel bad, he was just passing on some valuable wisdom. I won't forget it.

He was the humblest man I have ever known. He never personally took credit for anything. He always gave the credit to others—his leaders and his soldiers.

On one occasion, he received a letter from a very high-ranking general officer, congratulating him on the performance of the unit during a high-visibility mission. He had copies of the letter made for every soldier in the unit. The clerks typed up endorsements from him to every single soldier in the unit, and then he had a copy of the general's letter placed in each soldier's file.

What's interesting is that only about one-third of the battalion was directly involved in the mission. Because the mission required the battalion to pull the "horses" from all the companies, that meant that others had to pick up the slack to accomplish some other very important training, namely, the skills qualification test and expert infantryman's badge, which they did. He gave credit to each soldier. The entire unit, in his mind, was responsible for the mission's success and deserved the credit.

As a wise counselor to his junior officers, he always took great pains to show that there is no substitute for positive leadership. The direction of corrections can influence the minds of soldiers to see future solutions rather than past errors.

When a soldier was brought before him for an Article 15, it was the most frightening thing imaginable. After hearing a soldier's story with obvious attentiveness, he would lash out verbally in a very effective tirade about the crime the soldier had committed. An individual's loyalty to unit, country and decency would all be called to question in an extremely fierce manner. The amazing thing about his method was that afterward, when you analyzed all that he had said, it was no different from anyone else's Article 15; however, he placed such great emphasis on all points that the crime reached new lows of wretchedness.

After this speech, the commander would render his punishment, often achieving the miraculous and turning marginal soldiers around. He would tell the soldier about some of the things



'When a soldier did well, reward was instantaneous. If a soldier made a mistake, discipline was swift. He handpicked leaders who could maintain his standards.'



'He talked to the soldiers at least once a week, and sometimes more, when he sensed the need. He didn't tell us what was messed up—he told us how well we were doing.'

he knew the soldier was good at and give an example of something he had seen or heard of the soldier doing really well.

He told the soldier that it was a shame that punishment was necessary and made the soldier feel that he had been on the cutting edge of success in the battalion. The commander would order maximum punishment, then pause and often suspend all of it for a period of six months, telling the soldier that it had been the good things which the soldier had done that prompted the suspended sentence.

He would tell the soldier that he knew the soldier was capable of great things and that the suspension should not hinder him. This made the soldier feel grateful to the commander and, at the same time, reinforced the soldier's positive inner beliefs about himself. The commander made the soldier aware that his potential was noticed.

Many of the soldiers I had classified as duds walked out of the commander's office, turned on to our Army by the "punishment." They were inspired to work hard to maintain the faith and belief of the man they had just seen. It was then very easy for junior leaders to redirect this faith in the commander to faith in the entire chain of command.

He taught us that leaders should always be using "time off" as a leadership technique, and to be specific about when and why soldiers would get it. He used time off to make our soldiers want to excel. He told us that it was important to emphasize that time off was a reward for good things done by soldiers.

He would point out to his soldiers that others were working while they were enjoying their well-deserved time off. It became a matter of pride that they earned time off for superior performance, and they began to inculcate into everything they did the necessity to do things better.

He would teach his subordinates that all good commanders inspect. By doing so, they made their presence felt among the soldiers. An example of this was when we were preparing for the annual general inspection, just after our return from the National Training Center. We only had a few days to prepare. There was no time to draw in the experts from various support organizations.

He had a meeting with all the leaders one afternoon and told everyone that a leader must always let a critical eye survey each situation. He told us that we must always be our own harshest judge. It must be a matter of personal pride that no one is ever able to find fault with a thing that you have already inspected. It is important for officers to be the worst critics soldiers will ever face. In doing this, he said that there is then very little room for self-doubt or worry.

Units will benefit because of the inherent need for officers to be smarter on their subjects and because commanders have nothing to do because their subordinates are doing it all. That AGI became memorable within the unit as one of the best in its history. I am convinced that it was because he gave the officers a new way of looking at their jobs.

Our unit faced myriad changes every week, a common occurrence in our Army. He taught us a philosophy about changes and soldiers. It was important and applied especially to moving soldiers within the unit for disciplinary reasons. He said that changes should always be made during a very busy time.

The first duty day of a week is great because of all the changes that routinely come down on Mondays. He said that it doesn't allow people time to brood and think about the relative "rightness" of the change. If a soldier was going to be shifted or a new policy implemented, it was always put off until a Monday, if possible. The times this was done proved to everyone the wisdom of this little bit of applied psychology.

He strongly believed that every soldier had something to contribute to our unit and our country. He was quite fond of using stories about individuals from his past to illustrate this point. He told us about an incident once where an officer had been accused of racism by a soldier.

The actual sequence of events is not as important as what he said to us about that situation. He stated that racism can be neither accepted nor tolerated. "The fate of this country hinges on us acting as educated, honest, decent, honorable men." This summed up his beliefs and his actions about a lot of things.

We had a soldier with severe marital problems. I received reports of spouse abuse and drunkenness. The soldier had a volatile temper. While I was trying to figure out what to do, the boss took me into his office and offered some advice that I will never forget. It clearly indicated his concern for the individual soldier, even when the soldier was the wrongdoer.

He said to never back a soldier into a corner where he might say or do something in a fit of temper that you might be obligated to take action against. He said to always leave the soldier a way out or with a cooling down period or with a defusing technique such as asking the soldier, "When was the last time you called home?"

He taught us that the soldier sometimes must be protected from himself and that as leaders and as officers, we owe it to the soldier to always do our best to help him even in the bad times. This advice assisted me greatly in dealing with my soldier.

Once, he corrected the Adjutant, when the Adjutant had been making some derogatory comments about the Army. The commander said that a good officer *never* jests about his profession. A good officer never jokes about the "screwed-up motorpool" or says that an instructor really does not know what he is talking about.

There is a great loss on both sides when an officer allows himself to do this. It demonstrates that the officer has a lack of self-pride and allows soldiers who might be listening to question the officer's commitment to his job. This is particularly important for a commander, who always needs to show his soldiers the depth of his commitment by his willingness to work and serve under *all* conditions. "Soldiers deserve that attitude from their leaders," he said.

Our unit was in the field when a novel and unpredicted ice storm hit. We were not routinely prepared to handle sub-zero weather. All roads were closed and training had to be halted. Higher headquarters very clearly stated that cold-weather injuries would not be tolerated and that an Article 15 would be given to the officer that allowed this to happen. Additionally, warming fires were prohibited by range regulations.

Our commander did all he could do to protect the soldiers by ordering continuous surveillance by the chain of command. For warmth and protection, every soldier was to stay in his sleeping bag, except for meals and guard duty. Every two hours, leaders checked every soldier to make sure the soldiers were okay.

Eventually, our commander ordered warming fires to be lit, so that soldiers could dry out from the constant rain and sleet. Other units began reporting cases of immersion foot and other cold-related injuries. Then, one of my squad leaders saw one of his soldiers hobbling. The man was a marginal soldier destined for early separation from the Army. The squad leader and I physically carried the man to our commanding officer's tent. The medic there said that the soldier should be evacuated, and the man was sent to the aid station.

Word came back over the radio that the soldier had a case of immersion foot, and that the commander wanted to see me at the tactical operations center with all the details. I was one very scared young officer. After talking to the men in the soldier's squad, I discovered that the man had been checked every two hours as ordered but, when it was his turn to man the dismount point, the soldier stood his watch in a mud puddle, without his overshoes or socks. He was trying to get even!

I reported these facts to the commander. He said he understood but that higher's orders had been very specific. I was sent back to my unit to wait. While there, I was monitoring the command net when I heard the commander call back to our headquarters in garrison. He dictated a letter of reprimand addressed *to himself* and directed that his boss's signature block be on the letter.

He accepted complete responsibility for what had happened, because of the very inflexible orders that had been issued from above him. He understood that it was not my fault, and he was protecting me from orders that should never have been issued. I learned then that it was a leader's job to protect his subordinates at all costs.

I have seldom been more grateful or awed by something one of my commanders has done. Selflessness is not just a hollow word to those who are the Army's best.

This commander knew how to hold formations. He did not just stand in front of the unit and talk to us while we were at parade rest. He stood on a concrete block, had the soldiers gather around him and then put out the information. What I liked best about his formations was that he talked *with* us, and he'd ask us to take part in making our unit better. He'd tell us what was going on, and we knew that this guy really cared about us. He didn't need a microphone and soldiers standing at attention to make him feel comfortable. We knew he was comfortable just having soldiers standing around him.

Our commander led the singing at religious services. Lots of commanders can lead soldiers in the field, help with administrative problems, and kick butt when necessary; but few are willing to stand up in both the field and garrison and take the lead in religious ceremonies. This man could do anything.

He was a master at maintaining discipline in our unit. The entire chain of command was involved in every award, promotion, reenlistment and disciplinary action.

When a soldier did well, reward was instantaneous. If a soldier made a mistake, discipline was swift. He handpicked leaders who could maintain his standards.

If a soldier screwed up, he would bring in the chain of command, especially the squad leader. ("The soldier must realize that his squad leader is the source of reward and punishment.") His first questions to the chain of command were always, "What do we need to do with Pvt. Smith? Do we want to keep him in the Army?" If the answer was "No," maximum punishment and a discharge followed immediately. If the answer was "Yes," the squad leader named the punishment.

He was the most insightful man that I've ever known. He had the ability to look into a soldier's eyes and know how the soldier would react in a given situation. He used this ability to look deep into the soldier, assess his moral upbringing and put the soldier in a position that would maximize his talents. He also used this ability to determine what approach he would use when talking to individual soldiers. In the nine years that I have known him, I have rarely seen him misjudge a soldier.

The first lesson that I learned from him was the importance of "reading people." He related a story to me. As a lieutenant, he took charge of a new platoon. He walked through the barracks and found two soldiers whom he had nev-



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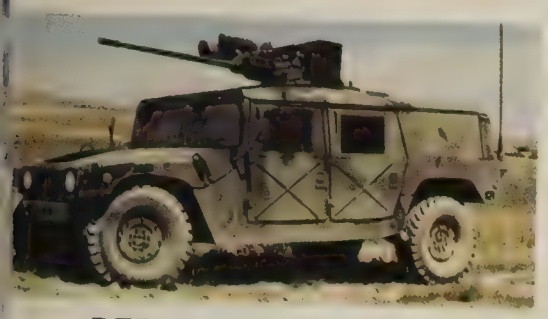
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'For what you have taught us about leadership in particular, we are forever indebted. We have learned something about this intangible art that most people only learn in war at the expense of human life and suffering, and we offer our thanks and thanks from the soldiers whose lives will be better as a result of what you have imparted.'

er seen before, armed and fighting with each other. In an instant, he looked into the eyes of each soldier, grabbed one, shook him and shouted for him to drop the weapon. He turned to the other soldier, spoke gently and reassured him, then took his weapon. Had his instincts not been right, we may never have known him.

One night, I was on duty at the battalion headquarters. While inspecting the barracks, I caught three of my soldiers smoking pot. A subsequent search revealed a large quantity of marijuana in the room. I took Smith, Jones and Brown to the headquarters and called the rest of the chain of command, including the commander. After we had talked to the soldiers, the commander asked the traditional questions. We told him that Smith and Jones had been constant problems and did not belong in the Army. Brown had been a model soldier. We felt this was his first and last offense.

He released the chain of command and gave orders that the three soldiers would be escorted to breakfast but would not be able to shave, shower or get into uniform. He wanted to associate their misconduct with their ragged appearance. After chow, they were to report back to him. By then, the legal clerk would have the necessary paperwork ready.

When he came back to the office, the commander saw Brown sitting on a couch, reading a Bible. Brown quickly slipped the book into his pocket and stood at attention. The commander did not acknowledge the Bible, but he saw it and knew that Brown was sincere and not attempting to curry favor.

Based on the chain of command's recommendations, Smith and Jones got maximum punishment and ordered prepared for discharge. Brown was then brought in.

The young soldier already knew the outcome of Smith's and Jones's proceedings and was very subdued when he reported. Brown was obviously embarrassed to be standing in front of his commander in this predicament and with such a ragged appearance.

The commander began by telling Brown how disappointed he was because Brown was "above all this." He told Brown that he had considered calling Brown's parents in California (he knew where each soldier was from) and asked Brown what their reaction would be. This broke the soldier.

Brown was ready to be rebuilt.

The commander explained that because of the offense, the maximum punishment would be administered, but that the $400 fine would be suspended because of Brown's outstanding performance. He then told Brown that the worst was over and because his squad leader had fought for him, Brown would be allowed to remain in the service.

He told Brown that he was one of America's finest and pointed up every one of Brown's good qualities. The commander said that Brown was in the best unit in the Army and that it wouldn't take long for him to earn back his private first class stripes. Six months later, Brown had done that. The last I heard, Brown was preparing for the E5 board.

When our commander was leaving us, here's what we said to him at our last get-together:

> When we consider your legacy, sir, we have no reason for sorrow. The list of our outfit's accomplishments is great and known to all here tonight, but more important than this, you have left us the reality and a true understanding of what it is to be a soldier, a leader, a mentor and a friend. That, sir, stays forever in every officer, NCO and enlisted man in the battalion.
>
> As a soldier, you have always shared the hardships and dangers of your men. "Dig your own hole and carry your own roll," you'd say. About soldiers, you have taught us the value of esprit, morale, discipline, and how to build and nurture the soldier's will to fight and win.
>
> As mentor, we have all benefited from your wisdom, experience and open lines of communication to make us more capable to serve. As a friend, you have never betrayed our confidence or failed to lend the needed support. You trusted us. You have given us a good feeling deep down about our worth and our contribution.
>
> For what you have taught us about leadership in particular, we are forever indebted. We have learned something about this intangible art that most people only learn in war at the expense of human life and suffering, and we offer our thanks and thanks from the soldiers whose lives will be better as a result of what you have imparted.
>
> So, sir, it's been great. It doesn't get any better. For all you have given, we offer our gratitude, and our pledge that, in this outfit, the spirit of the warrior will not diminish on your departure.

* * *

And so there he is—this fine Army leader I've been talking about—one person at two levels of command from three different perspectives over eight years of time in a wide variety of field and garrison situations. I'd like to tell you some things I learned when I put all this together and thought about it.

First, this guy—one of you, out there, somewhere—just flat out enjoys, *deep down, the hard work and continuous challenge of being a commander and of leading soldiers. Everyone, it seems, is super quick to talk about how great command is and how much he likes it, but this ain't really an Army "truth," and Army command selection procedures, sadly, don't consider this variable.*

Too many commanders do not want to command, do not like it while they do it and are glad when it is over. Eight or ten years of teaching and talking leadership with 1,500 officers from the potential senior commander pool at the Army War College in Carlisle Barracks, Pa., told me this is so, and three years of teaching leadership to every combat arms battalion and brigade

command designee at Ft. Leavenworth's precommand course reiterated the point at a far worse, and sadder, time. Few came right out and told me they didn't want their command, but I can listen to people's words and watch people's eyes. Some few did tell me and then went on out to lead their soldiers.

Maybe subordinates do not talk about it much because it's bad luck or they do not want to believe it, but subordinates know when the boss's heart is not in his work or his unit. Think about those subordinates' stories back there and the importance they gave to the boss's overall "attitude." Subordinates have to know and they will. They sense it out always. A commander is an authority figure, like a father or a teacher. Think about being the son of a father who doesn't want to be, or the student of a teacher who doesn't like to. How much could either help you to "be all you can be"?

The second thing I learned was something about the "bottom line"—a management term (like "zero defects") which we witlessly picked up from the corporate world a few years ago and made part of our everyday language, unaware of its corrosive impact on our moral and ethical climate.

This fine leader I have been telling you about has a different sort of bottom line. It comes from a certain consistency in the way this guy leads, at least as viewed at two levels and from three perspectives. His beliefs about the worth and potential of people, the responsibilities of command, the importance of higher order principles, and the value of teaching all seem to be constant over time, situation, organizational perspective and level.

His bottom line is neither numbers nor results. It is, instead, a bedrock foundation of beliefs and convictions that tells him what is "right" and what must be done. Again, the subordinates are quick to sense this out and to predict the commander's intent.

Finally, and most important to me at least, I learned, like never before, that this fine leader (and those of you like him) is, as a leader, worth nothing by himself. The subordinates must always be there, must always be considered. Leadership can only exist when leaders and subordinates interact.

There is no such thing as "leader" unless this interaction occurs. There is no way you, or anybody else, can be a leader unless there are subordinates. Leadership, as a theoretical construct, a research concept, an observable behavior or the subject of a bull session in the mess hall, just does not exist and is hardly worth talking about unless subordinates are part of the equation. The Year of the Leader is also and equally the Year of the Subordinates.

Once again, as I think about this good leader, it is clear that, for him, subordinates are always here in the equation irrespective of time, level, perspective or situation. A little time spent rereading those subordinates' comments will not be wasted. You'll see that the reason he taught them so much and fired their souls was that they, the subordinates, always knew that they were part of the equation.

Okay, so what? Is there any practical value in these things I have been telling you? Yes. Let me put together a suggestion from some of the parts and pieces of what has been discussed. It has to do with the command selection process, brigade level.

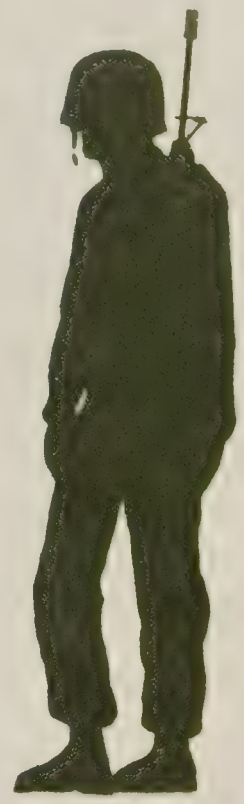
What it would do, at least in my mind, is begin to steadily increase, over time, the number of soldiers, officers and enlisted, who know they are always considered and always part of the equation. Get this going, and I think the second and third order effects on the Army's soldiers, the Army's culture and the Army's mission will be obvious.

All you have to do is one simple thing. Ask those who want to command brigades—or who say they want to—to apply for the position, just as most did earlier on the path to career success when they applied to graduate school. In the application, ask for some supporting documents, just like graduate school. You don't need letters of recommendation from superiors because you already have those in the OER file. And instead of the graduate record exam or the Miller analogies test, use an afternoon's worth of psychometric tests developed from the Army Research Institute's major three-year study on senior level leadership. Instead of that long-winded letter to the Military Personnel Center on "How I Can Help the Army by Going to Graduate School," require one on "Why I Want to Command a Brigade and the Command Philosophy I Intend to Use."

Finally, as to letters of recommendation to accompany the application for this leadership position, ask instead for "Statements of Observations" from eight or ten different people—from those who must always be considered if leadership is the phenomenon of interest, from those who must always be part of the leadership equation—from subordinates, immediate subordinates with whom the applicant has served in the last five years. And give the applicant the "U-Pick" option.

Subordinate ratings? Yes. Subordinates are always going to rate their bosses anyhow (you read some subordinate ratings a few pages back); the only question is whether or not, in selecting the Army's future senior leadership, you want to take advantage of the perspectives of those who are the inseparable other half of the leadership equation . . . the subordinates.

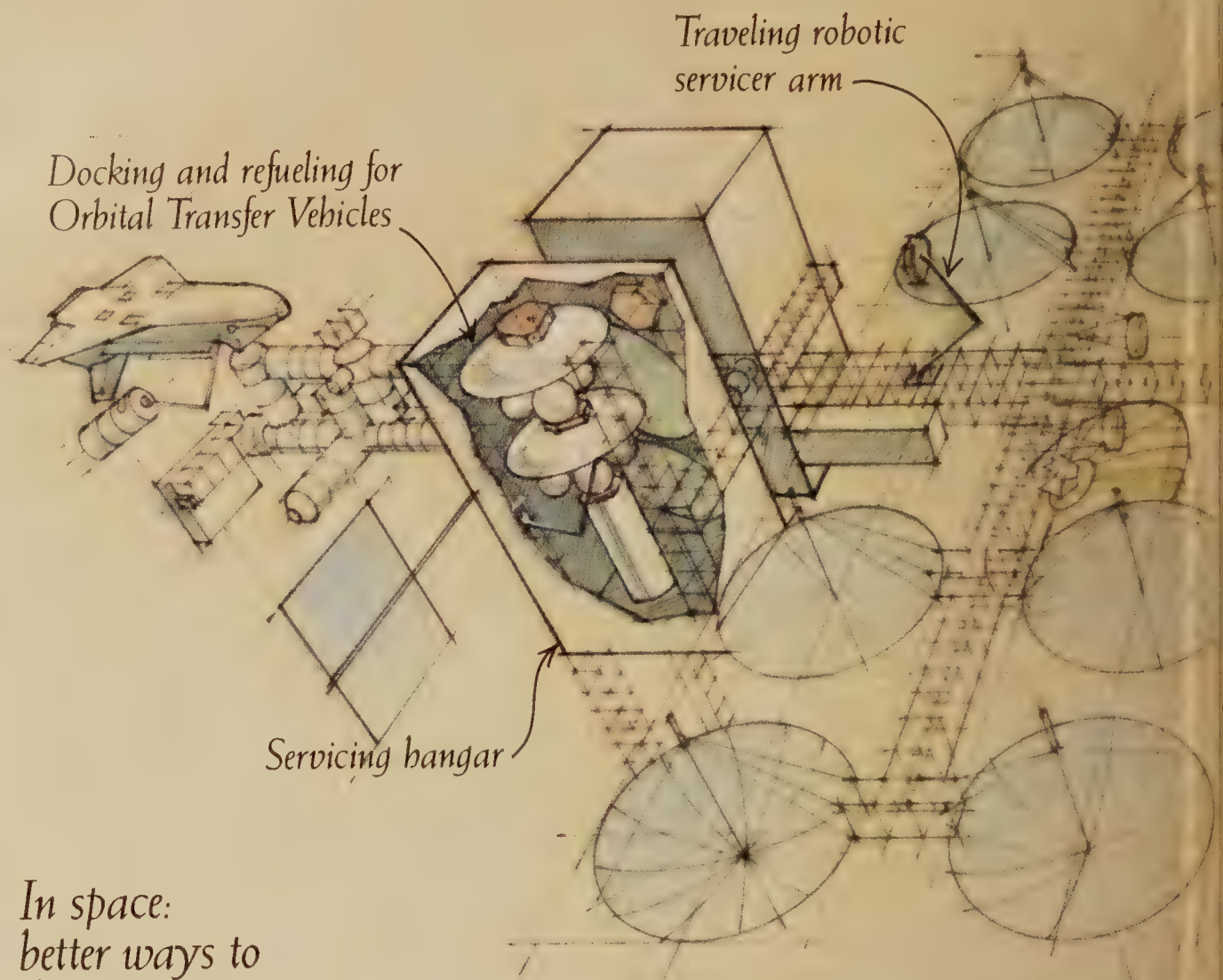
Think about this notion and about its implications for your Army's future and, if you can find that good leader I've told you about, ask him what he thinks. He's out there . . . somewhere . . . walking around among you.



'The only question is whether or not, in selecting the Army's future senior leadership, you want to take advantage of the perspectives of those who are the inseparable other half of the leadership equation . . . the subordinates.'

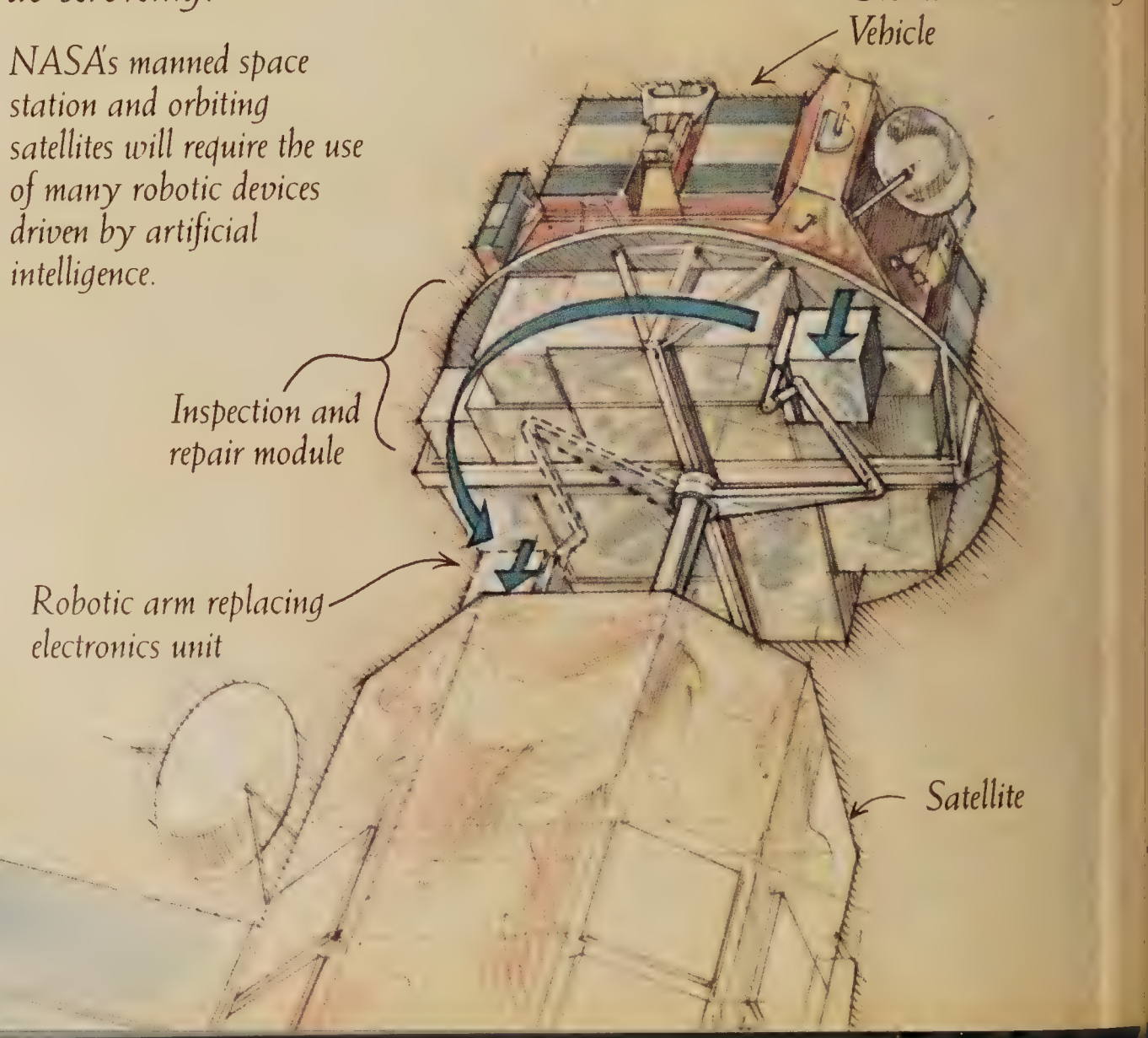
Artificial intelligence and robotics: giving machines the ability to sense, reason and act.

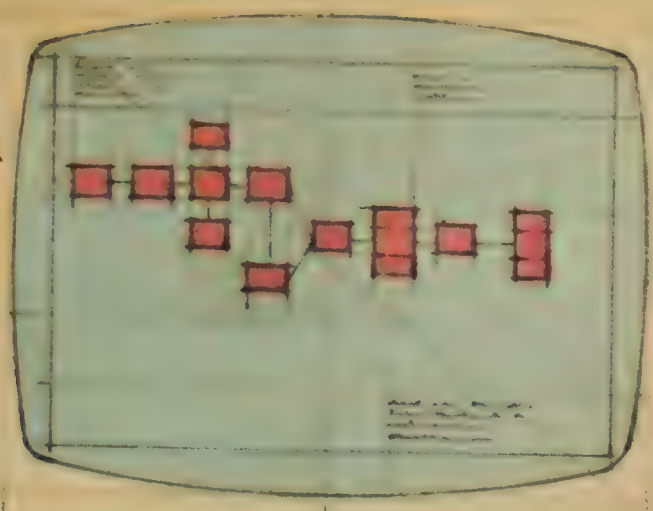
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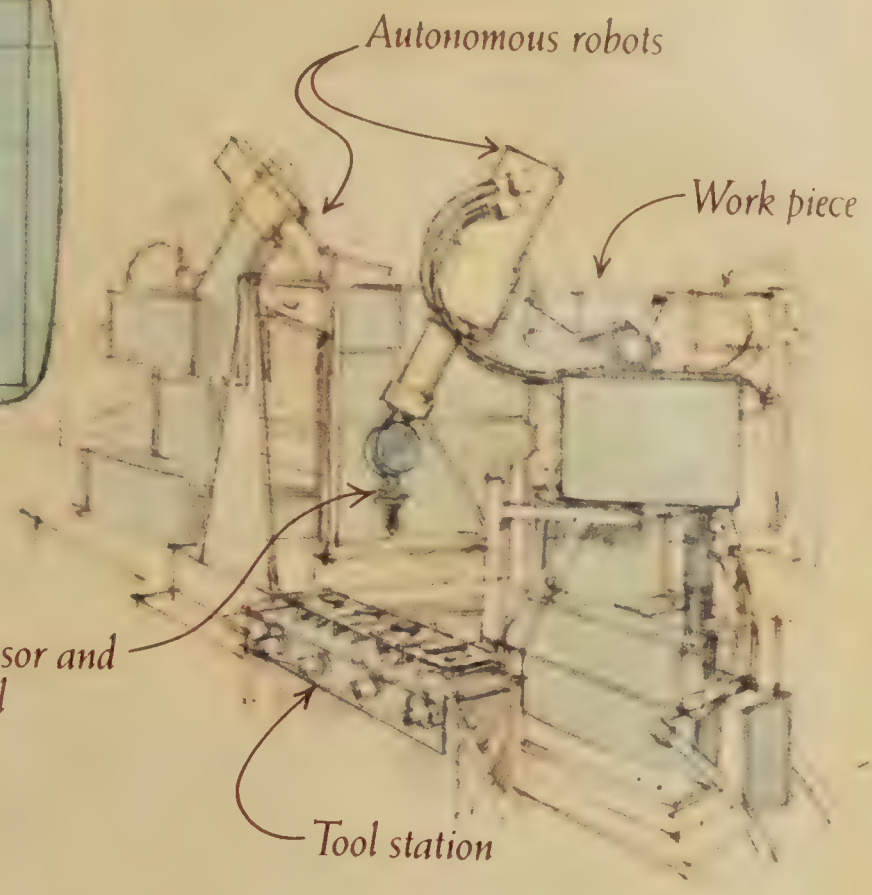


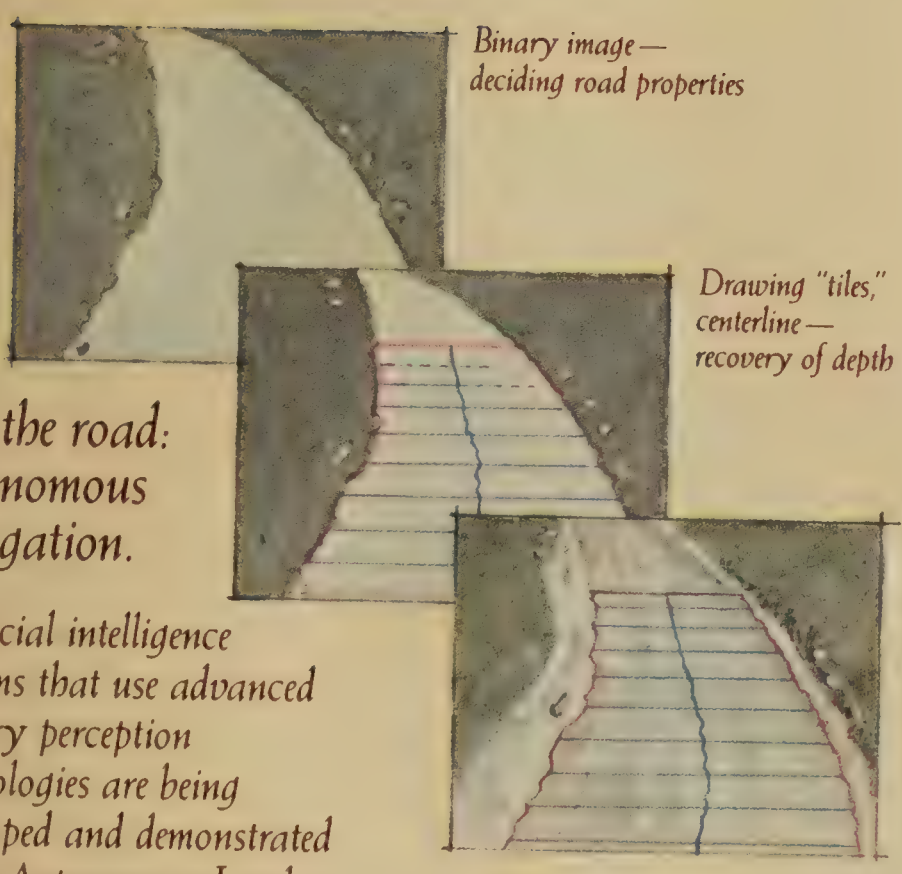




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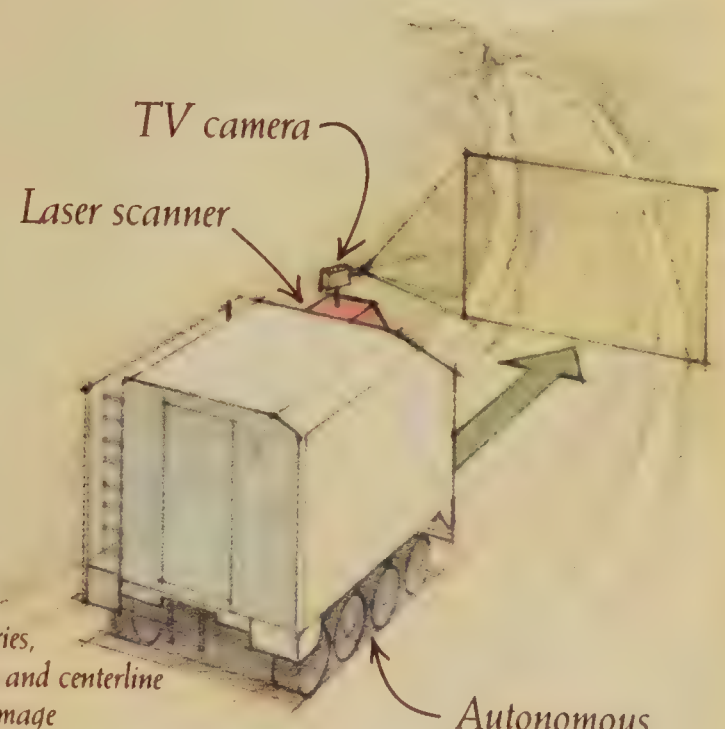
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Ambush patrol—Christmas, 1965



Silent Night, Dangerous Night

By John D. Harris

The 24th of December, 1965, was a hot, humid day in Vietnam. I was a newspaper correspondent. I had been in Vietnam a few months and had been shot at by everything from Vietcong snipers to American artillery. At about 4 P.M. that day, I walked into the press tent of the 173rd Airborne Brigade, the Army paratrooper unit protecting the U.S. Air Force base at Bien Hoa, 25 miles north of Saigon.

A major sat behind a table. A few GIs, some bare chested, sat pecking at typewriters, reading newspapers and sweating in the afternoon heat—not exactly a Christmas atmosphere.

The major looked at my GI fatigues and jungle boots. I told him I wanted to talk to some of the men pulling guard duty around the base perimeter for a Christmas story. The editors would go for it: our boys in Vietnam on Christmas Eve. The major nodded. He cranked up a field phone.

"Let's see what 'A' Company's got going," he said. "Hi, 'A' Company? Brigade

information office here. We got a reporter who wants to talk to some of the guys on the perimeter, for Christmas and all that stuff. Can he come out now?"

A pause. The major said, "Uh-huh," then "uh-huh" again. He looked up at me. He listened for a while and nodded slowly. "Well, let me talk to him. Hang on."

The major leaned back in his chair, holding the phone. His face was blank.

" 'A' Company says they don't have anyone on the perimeter today," he said. "But they have an all-night ambush patrol going out in the jungle pretty soon and they say you're welcome to join them. What shall I tell them?"

The paratroopers in the tent stopped typing and reading newspapers. The silence was heavy.

I tried to think fast—an ambush patrol . . . a killing patrol . . . a patrol looking for trouble—not like most patrols, with merely a reconnaissance function. The mission of the patrol would be to blow away enemy soldiers trying to get close to the Bien Hoa airfield.

The field had been penetrated by Vietcong sabotage squads a few months before and some F–100 fighter-bombers had been destroyed on the flight line. The U.S. command in Vietnam did not want that to happen again. F–100 operations based at Bien Hoa were crucial to American strategy in Vietnam—hence continuous patrolling around the field by the 173rd Airborne, a tough outfit that had seen continuous action since arriving in Vietnam a few months before.

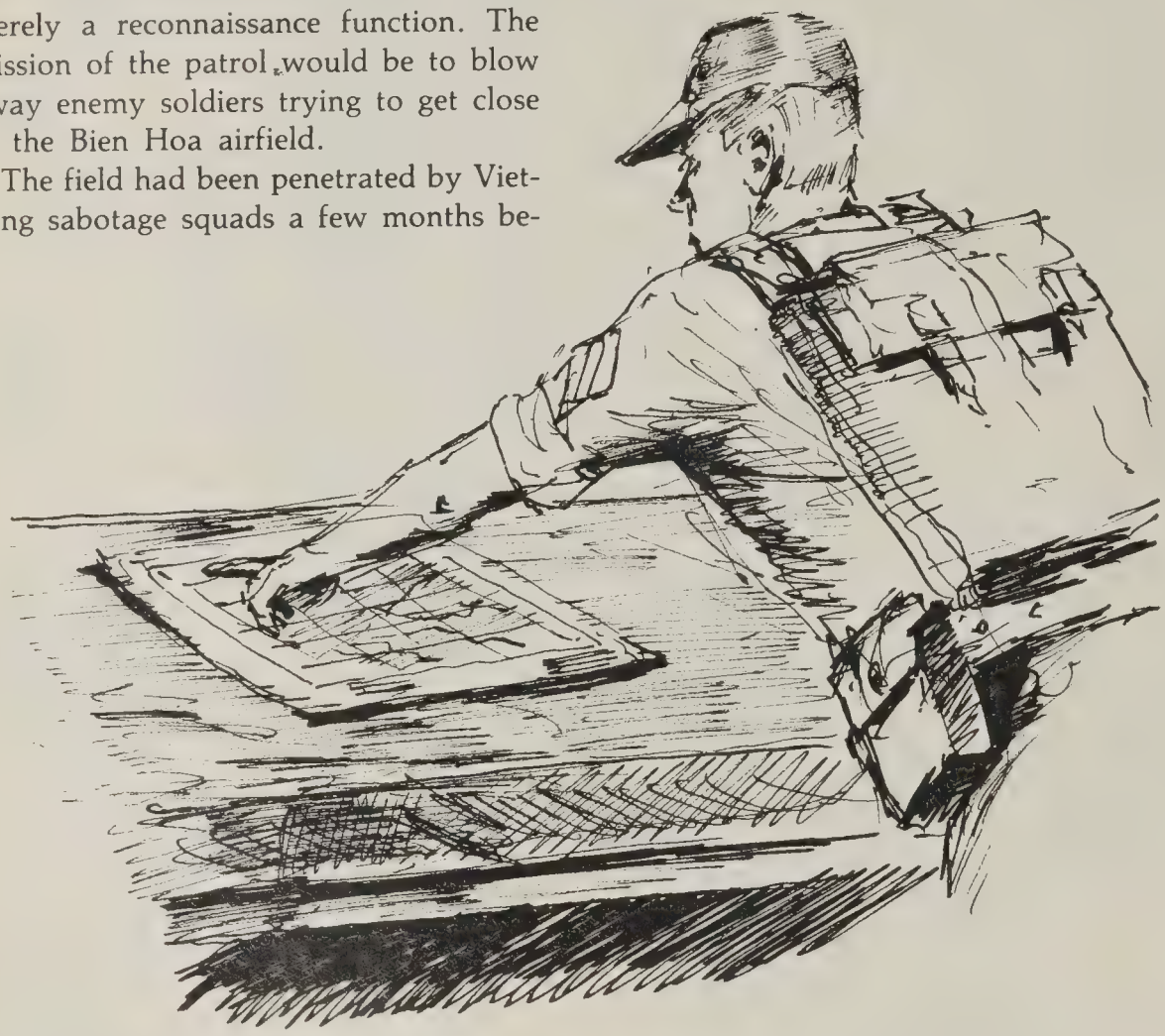
But the hell with the 173rd Airborne.

An ambush patrol was not exactly what I had in mind for this Christmas Eve. My plan had been to get a story fast, telex it to the United States and then have Christmas Eve dinner with the other correspondents in Vietnam at the Caravelle Hotel roof restaurant in Saigon.

The major and the other paratroopers in the tent were still staring at me. The major gestured with the telephone, questioningly, still with that deadpan look. Okay, hotshot reporter, what are you going to do? I returned their stare. I felt my mouth go dry. I didn't have the guts to walk out of there.

"An ambush patrol?" I heard myself say. "Sure, that sounds like a great idea. Tell them okay."

Ten minutes later, a jeep pulled up outside the press tent. The GI driver took me to a row of tents on the far side of the field. He led me into the first tent in the row. Six or eight GIs looked me over.



"Here he is," my driver said, "the reporter."

A trim, deeply tanned sergeant introduced himself to me as the commander of the patrol.

"You ever spent a night in the jungle before?" he asked. His eyes bored directly into mine.

I said "no." I sat down on one of the cots. I took out my notebook: exclusive interview with S.Sgt. Charles N. Brown, 503rd Infantry, 173rd Airborne Brigade, U.S. Army, Bien Hoa, Vietnam, Christmas Eve, 1965.

Hometown? "New York." How long in the Army? "Twenty years." Seen much combat? "Seen more dead men in one day than most undertakers see in a lifetime." Ranger instructor. Parachute instructor with about 1,000 jumps. Behind-enemy-lines combat jump in Korea. Two tours in Vietnam. Decorations? "Ah, forget it." What did he think of the Vietcong? "I can handle any 12 of these bastards. It's that 13th son of a bitch who's got me worried."

End of interview.

Sgt. Brown spread a map on a cot. "This is where we're going," he said, stabbing a finger at a space designating spidery trails in the area north of the base. The 173rd was sending several patrols into the area that night, he explained. "Vietcong's in strength there," he said. "They've been pouring down these trails recently, hundreds of 'em. I lost 18 men there the other day."

I suddenly felt pretty tired. I looked around. One GI was squinting through a rifle barrel. Another was sharpening a knife. I studied them: paratroopers—tough guys—but their faces registered a certain fatalism, the look of men who have resigned themselves to death.

The soldier who had driven me in the jeep came up to me with half-a-dozen grenades cupped in his hands, as if they were hard-boiled eggs. He looked about 18 years old. "Here," he said, "you better take some of these along."

The damn things were six inches from my face. I shook my head. "No," I said, "if I take anything I'll take an M16."

The rules about arming correspondents? In Vietnam, all bets and most rules were off. Some combat outfits liked to arm correspondents so that they could pull their weight if trouble came up. I'd had weapons shoved into my hands by the Ninth Marines, the Army's 1st Cavalry Division and pilots of the 8th Bombardment Squadron (Tactical). The 173rd Airborne was no different.

"Do you have a spare M16?" I asked the kid with the grenades. He handed me one, plus a dozen clips of ammunition. Christ, I thought, how do I get out of this?

One of the men produced what was then a novelty: a Polaroid camera. He had bought it the day before in the base PX. We lined up outside the tent to have

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JOHN D. HARRIS, a former Hearst foreign and war correspondent, is a writer living in Los Angeles, Calif.



The author (standing, second from left) lines up for a picture with seven members of a 173rd Airborne Brigade ambush patrol shortly before setting out on 24 December, 1965. Most of those in the photograph were eventually killed during the war.

our picture taken. I was given the first copy.

I've kept it since, framed on the living-room walls of the homes I have had in New York, London, Brussels, Paris, Rome and Washington, D.C. It is now in my home in Los Angeles. It shows seven paratroopers and me under a cloudy sky with some tents in the background. I have been told that most of these seven soldiers were eventually killed in Vietnam.

We went back inside the tent. After a while Sgt. Brown looked at his watch. "Saddle up," he ordered.

We were joined by some men from the next tent. We walked in single file past other tents, flaps rolled up, containing men stretched on cots, sleeping, reading, staring at us.

I found myself placed in the center of a line of 14 men. It was about 6:30 P.M. and still hotter than hell.

We walked past the dug-in military police at the camp's perimeter wire. "Hey, man," one of them said to me, "you look like a real paratrooper." I nodded. But I'm not, I told myself. I'm just a dumb son of a bitch. What am I doing here?

We continued, now with several yards distance between each man, into a wide, tree-flanked space toward a wall of thick jungle. Before the wall, a path led abruptly left for about 50 yards, then turned right into the jungle, becoming a narrow, dim trail.

We were now in the true Vietnam jungle. Giant, densely packed trees formed an interlocking canopy over our heads that blocked almost any view of the sky. The forest was enveloped in an even, sinister gloom. On either side of the trail, often wide enough to permit the passage of only one of us at a time, a tangled mass of green vegetation provided perfect cover for animal or man.

The air was still. Not a leaf moved. The humid heat was intense. I was drenched in perspiration, but that discomfort was nothing compared to the fear that tightened a vicious knot in my stomach the deeper we moved into this nightmarish world.

I've got to get out of here, I thought, I'm not going through with this goddam patrol. I'll tell them I feel ill. I'll pretend to pass out. I'll fake a heart attack. Then they'll have to take me back. I'm not going to spend the night in this goddam forest.

We trudged steadily ahead.

"Listen," I whispered to my grenade-toting friend, striding before me. His grenades, instead of being cupped in his hands, dangled from his equipment. "Listen, how do we know there aren't a thousand gooks sitting a foot off this trail watching us, getting ready to zap us?"

He half turned to me. "We don't," he said without smiling. "We're the DEW line, pal, the distant early warning line. If we get zapped, that means there's enemy near the base. That puts the base on alert. That's why we're doin' this, pal."

One foot after the other. Was the trail mined? Booby trapped? Sometimes the Vietcong hid grenades at face level in the brush, controlled by trip wires. They blew heads off.

We marched for more than an hour. We reached a small clearing and another trail that crossed ours. Sgt. Brown halted the patrol. His eyes roved the fading light.

"Let's set up here," he said. "Watch the trees for snipers."

He sent two men a short distance up each of the four cross trails. I settled down, my back against a tree. I drank from my water canteen and opened a pack of C-rations. I lit a cigarette. Some



of the men began to take off their packs.

A machine-gun burst stuttered, close—then another.

The men tensed, crouched over their weapons. I froze, my back riveted against the tree, the M16 suddenly in my hands. The two paratroopers who had been sent up the northern cross trail came into view. They had spotted a Vietcong scout, maybe the point man of an approaching enemy patrol. "He tried to run," one of them said. "But I got him."

Sgt. Brown nodded. He thought for a moment. He was faced with a tactical problem. He didn't look happy.

"Let's get out of here," he said. "Fast. Let's set up further back."

The other posted guards were recalled and we moved back along the trail on which we had come. Darkness was descending rapidly. The paratroopers drew bayonets and fixed them to their rifles. I moved ahead with the 14 GIs, now ghostly, near-invisible shapes.

With the swiftness of the tropics, the darkness became total. Each man grasped the belt of the man before him. We formed a slim, human snake in the silent blackness.

We marched for about 500 yards, our eyes adjusting to the night. Sgt. Brown led the patrol a few yards off the trail, to the left, through a line of trees and a thicket of bushes to a small, leaf-strewn clearing. He whispered to me that he had spotted the clearing on the way to the cross trails and had made a mental note of it in case a retreat had to be made. He peered around the clearing, into the jungle and up at the tall, surrounding trees.

"It ain't much," he said, "but it's home."

The patrol set up its ambush position for the night. Six pairs of men prone on their stomachs forming a circle, facing outward. Sgt. Brown, the other sergeant —whose name I have inexcusably forgotten—and myself squatting in the center of the circle around a radio. I looked at my watch: 8:12.

I would have been meeting my girl friend at the Caravelle Hotel bar about now.

In the darkness, the luminous hands and figures on my watch blazed like headlights. I turned the watch to the inside of my wrist. Each half hour we were scheduled to make radio contact with the Bien Hoa base. If the contact ceased, someone at the base was supposed to come looking for us. Or what was left of us.

"Charlie six to Parachute seven," Sgt. Brown muttered into the radio. *"Situation normal."*

I sipped from my canteen. The trees around us were tall, ghostly sentinels. This jungle—home of snakes, tigers, wild pigs, monkeys and birds—was also crawling with men, Americans and Vietnamese, trying to kill each other. The Vietcong, too, had its ambush patrols, each side playing a lethal game of hide-and-seek. I find you, bang, you're dead.

It was a great way to fight a war: no tanks rolling down highways, no planes, no battleships, no parades through liberated cities—just the jungle and the night.

I strain my eyes to pierce the darkness. But I can't see the surrounding GIs, just 15 feet away. I look up. Some of the leaves of the towering palms surrounding our position don't quite meet and in the gaps between them a few stars sparkle against a black sky. There's something malevolent in the way the branches part to admit a view of the sky. They seem to say, *Look at the beauty of the night, of the stars, you will never see them again. . . .*

Ten hours of darkness ahead. Seconds and minutes pass with agonizing slowness. A half hour has passed, I'm certain. I look at my watch. Ten minutes.

"Charlie six to Parachute seven. Situation normal."

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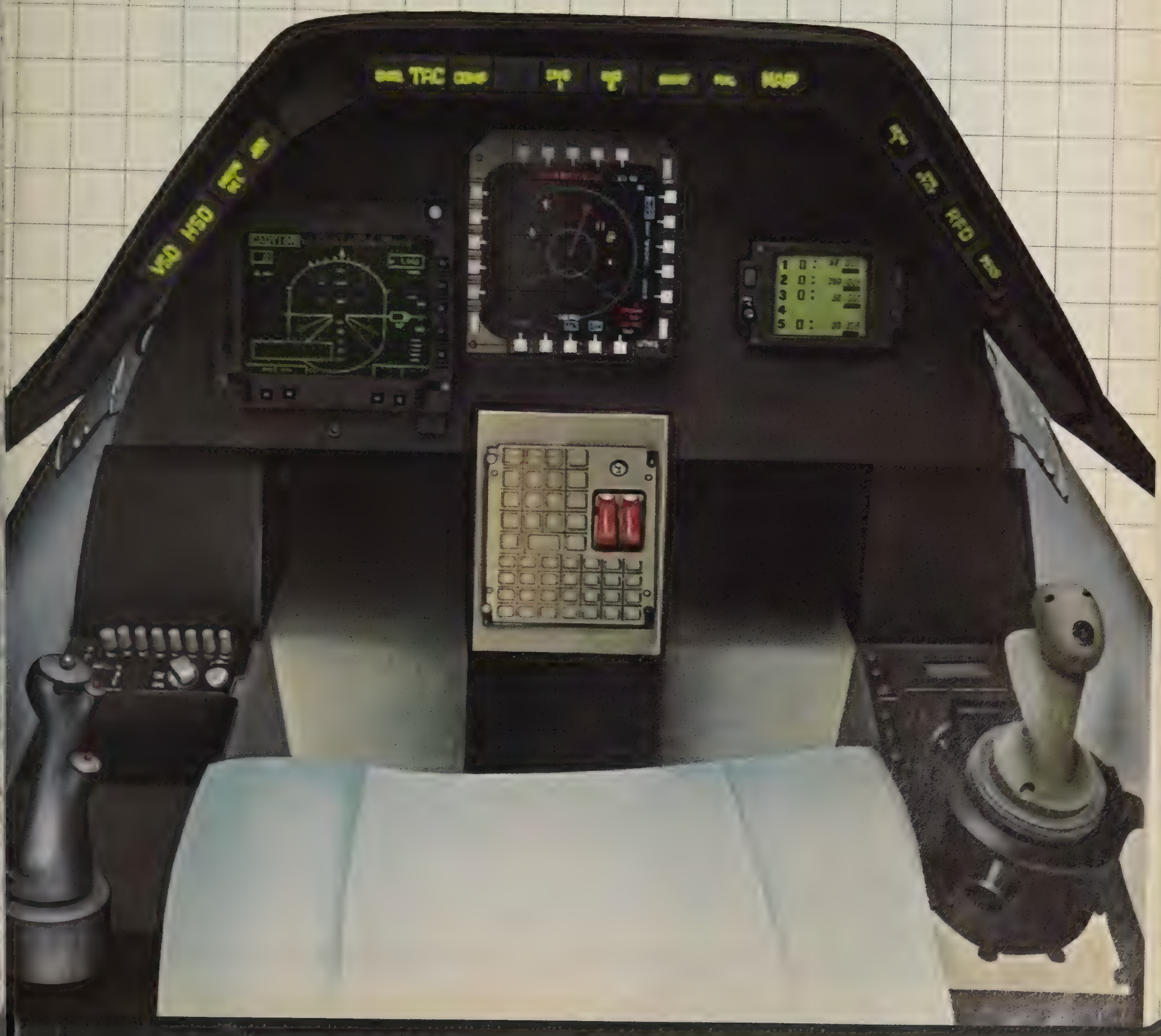
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I hear a sound, a rustle in the jungle. I clench my teeth.

"Ain't nothin'," the other sergeant whispers, sensing my fear. "That ain't no man. That's an animal, pig or somethin'. He movin' here an' there, this way an' that. He don't know where he's goin', just smells somethin' good to eat but can't figure out whether it's gonna eat him. So he moves, waits awhile, runs here, runs there. But a man, now you got somethin' different. You got somethin' knows what he's doin', where he's goin' an' why. He comin' to kill you, baby, an' he moves real steady, one shove at a time. He's a jungle fighter, you listen now. Easy to tell the difference."

It was a fast course in jungle warfare —learning on the job.

After a while, I hear the jungle: little snaps of twigs, rustles, the sigh of a breeze, something falling from a tree. What the hell time is it? Goddam, just 10:20. I'm bushed, but sleep is a joke. I've been scared before, but never like this. I try to measure time by the half hourly intervals between Sgt. Brown's whispered message into the radio.

I'm seated cross-legged, the M16 across my knees. I look at the thing. I make sure its safety is secured. I check the magazines at my feet.

"Charlie six to Parachute seven. Situation normal."

I hear something. The sound is faint, coming from far away.

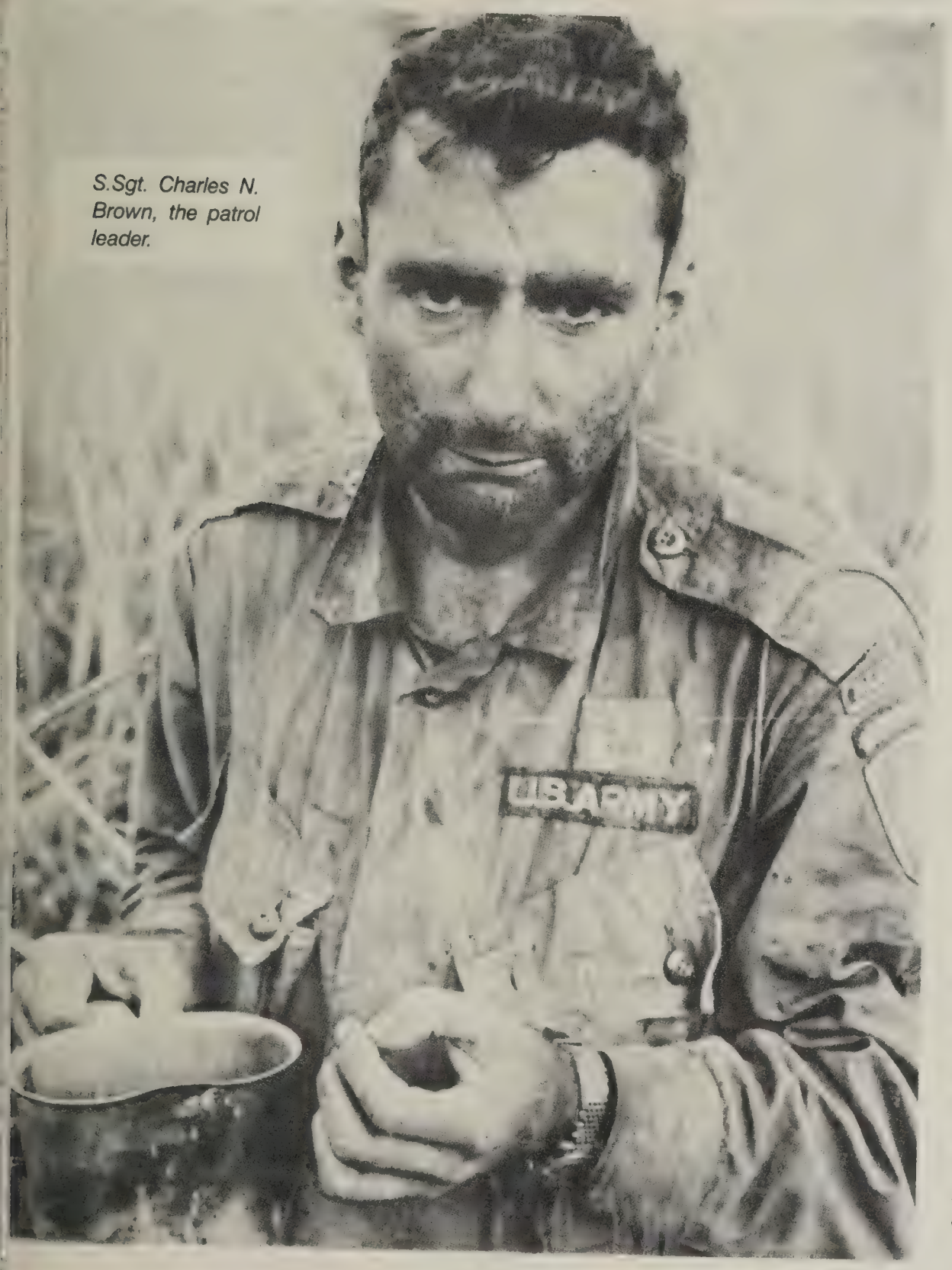
Wait a minute. Voices singing? We look at each other. Yes, voices singing—singing, what's more, "Silent Night, Holy Night." In Vietnamese!

Must be a village with a church somewhere near . . . or maybe far. Sound carries a long way in the jungle at night. We stare at each other again. We hear bells, church bells, distant but clear. I look at my watch again.

It is midnight, Christmas Eve, 1965.

Sgt. Brown, the other sergeant and myself raise our water canteens. Merry Christmas, we whisper, Merry Christmas. "Here's to a long and happy life, pal," Sgt. Brown says.

But I have the feeling my life will be short and that it'll end unhappily—like any minute.



S.Sgt. Charles N. Brown, the patrol leader.

We'll never get out of here alive. The odds are too great. Fourteen GIs and a reporter deep inside Vietcong territory? Forget it. Merry Christmas and bye-bye. But so what? I find I'm at peace with myself and everybody else or almost everybody. It hasn't been too bad a life. There are worse things a guy can do than be a newspaperman. Right now, though, I can't think of one.

The singing and the bells cease. Silence envelops the jungle again.

"Charlie six to Parachute seven. Situation normal."

Five, almost six, hours to go before dawn, before we can get up and begin the hike back. Maybe we'll make it yet.

I'm tired as hell, but I'm too scared to let myself drift into sleep. Yet I doze, head nodding, then jerking up in alarm. I doze again, but I'm awakened by a nearby sound. Someone is snoring. Sgt. Brown curses softly, crawls over to a pair of prostrate GIs and shoves one of them, hard.

"Shape up there, goddam it," he whispers savagely. "Shape up!"

The second hand crawls around my watch. The darkness is more impenetrable than ever.

But wait: a sound . . . then another. Something is moving . . . close—something that sounds as if a heavy weight is being dragged along the leafy jungle floor, with pauses at regular intervals.

Christ, here they come!

A GI throws out a flare grenade and a patch of jungle is brilliantly lit, as if by a powerful searchlight. We hear more rustles, confused scuffling sounds. All right, you sons of bitches, where are you? Come out and fight! Sgt. Brown is prone beside me, sighting along the barrel of his M16, finger coiled on trigger, man and weapon fused into a single, lethal machine. I find myself prone, too, gripping my M16, determined not to let down the men around me.

The flare sizzles and splutters, shed-

ding hard, white light on tree trunks and foliage, creating ghostly shapes and dancing shadows.

Gradually, the flare subsides, then dies as if a switch has been flicked off. Once more, darkness is a shroud over our position.

Nobody moves. The silence is alive, electric.

We wait, tense to the breaking point.

But nothing happens: no charging, screaming enemy; no grenades bursting among us; no mortar shells whining in; and no streams of tracer fire.

Nothing—only the darkness and the night. I feel, rather than see, the men gradually relax. The wait resumes.

"Charlie six to Parachute seven. Situation normal."



It came slowly. There was no way to know when it began. But, as in a dream, I realized that I could now see, in grayness instead of blackness, the forms of the two GIs closest to me. The grayness increased, lightened. The trees, the foliage, the other men, the two sergeants, the radio, were now visible as dawn crept through the jungle.

It was Christmas Day.

Sgt. Brown, cradling his M16, looked up at the tree branches. "Bad time right now," he whispered. "We got to get on our feet. Anyone wants to know where we are, here's their chance. And they got a pretty good idea already, on account of that flare grenade."

A flight of birds, brilliantly plumed, came swooping and swerving low, flashing through the forest.

Now we have to get up.

The GIs rise warily, first on one knee, weapons ready, eyes scanning the jungle, the tree branches. One by one, the GIs stand up. It is a moment of mute fate. If the Vietcong are going to open up, they'll do it now. For a few seconds, nobody moves. This is it, life or death. But nothing happens.

Then there was nothing else to do but turn our backs and begin the march home.

I was placed second last in line. Every few minutes, I turned my head to see if the last man was still there, for his sake and mine. Each time I turned, he waved and I waved back. We marched in single file, a long space between each man, in case the trail had been mined during the night, in case mortar fire was directed on the trail, in case we were ambushed. . . .

With each step, my fear diminished. These guys were my friends, and I was heading home with them. This was my outfit, the 173rd Airborne Brigade. It always would be, for the rest of my life.

The sun rose, its heat filtering through the treetops, burning the night's chill from my fatigues. Tiredness vanished. I strode easily, as if I had slept ten hours.

We passed through the Bien Hoa base perimeter wire, returning the military police's Merry Christmas greetings. Yeah, Merry Christmas to you, pal.

Before leaving, I shook Sgt. Brown's hand. Take care, man. Yeah, see you around.

I thumbed a ride back to Saigon and was picked up by a jeep containing two Green Beret officers. Christmas Eve in the jungle, I grinned, gripped by the exhilaration that comes with a reprieve from death. They said nothing. They drove me to the Tu-Do, the bar-and-brothel street where United Press International had its Saigon news bureau. I sat down and wrote the story. An operator punched tape and put it on the wire.

I did not know it then, but it was snowing in New York and the wire editor did not make it to the office that day. When he came in, the day after Christmas, he saw the December 25 dateline on the story and decided it was yesterday's news. He threw it in a trash can.

* * *

Fourteen years passed.

I had left Vietnam long ago. I was based in Italy and winding up ten years as a foreign correspondent in Europe, the Middle East and Africa. After Vietnam had come more long nights. Northern Ireland, the Sinai Desert, Cyprus, Rhodesia. . . .

On Christmas Eve, 1979, the phone rang in my Rome apartment, with its view of the Spanish Steps, with its elegant, flower-decked terrace overlooking a fourteenth-century street.

The voice on the phone was terse.

"Is this the guy who spent Christmas Eve, 1965, with the 173rd Airborne Brigade?"

I was stunned. After all, 14 years!

"Well, yes, it is," I stammered. "Who's this?"

"This is Sgt. Brown!"

I froze.

"You're kidding! Where the hell are you?"

"New York. I'm out of the Army. I'm just calling to say hello. I kinda tracked you down. Any time you're in town, stop by."

My memory went back to that night, to that Christmas in the Vietnam jungle.

"I'll be there, sergeant," I said. "I'll be there."

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A Patriot fire unit arrives in West Germany.



Raytheon

By Lt. Gen. Robert L. Wetzel
and the V Corps Staff

Central Guardian And the Lessons Winter Taught



When Gen. William T. Sherman said that war is hell, he had obviously never conducted a winter campaign.

Throughout the history of warfare—especially in the northern parts of the Northern Hemisphere—winter has traditionally been a period of rest, refitting and reorganizing for the spring campaigns.

Of course, there have been notable exceptions recorded, but most of them amply proved that "General Winter" is a strong proponent of a winter defense and is a terror against the attacker. This has been especially true in the large-scale campaigns, such as Napoleon's disastrous intrusion into Russia in 1812 and Germany's experiences over the same Russian terrain in 1941–1944.

In the latter example, although Adolf Hitler's army made dramatic gains, it was the pervasive effects of winter and distance that crumpled his attacking forces at Leningrad, Stalingrad and Moscow, making the familiar pictures of "winter Fritz"—the German soldiers wrapped in all kinds of civilian clothing in an effort to stay warm—a graphic example of the problems of winter warfare.

Another classic example of winter operations was the Battle of the Bulge in 1944. Because of surprise and shock, that winter attack by the German army's massed formations also achieved initial gains. The effects of winter, however, on supply, transportation and maneuverability were deciding factors in slowing the German attack and enhancing the effectiveness of the Allied counterattacks.

Notwithstanding all the disastrous oc-

While frigid weather is not the ideal condition in which to fight, history augurs ill for armies inexperienced in its peculiar conditions; a long list of nonspecialist Army units conducted cold-weather operations in the 1985 NATO exercise Central Guardian, the first winter edition in several years.

currences noted in the history books, military forces still need to know how to operate in winter conditions. This level of preparedness applies to all Army units —not just to those which may be specially trained to fight in cold weather, such as mountain troops who can ski to their battlefields and are familiar with the harshness that winter adds to already rough terrain. It is unrealistic to assume that elite Arctic troops could be expected to be in the vanguard of every force conducting a winter campaign.

Therefore, the need for all soldiers to know how to live safely and fight effectively in winter conditions is both realistic and necessary. Many units incorporate such training into their yearly training schedules, but from my perspective as a corps commander, much more needs to be done in practicing large-unit tactics that corps and armies may have to employ in wintertime.

That was the driving rationale behind the scheduling of the annual Reforger (Return of Forces to Germany) exercise in January 1985 and conducting field training exercise (FTX) Central Guardian in the snow-covered hills and plains of the West German state of Hesse.

The FTX was indeed a massive undertaking. It was the first major corps-level winter exercise in six years, the first winter Reforger since 1979 and the first-ever V Corps winter FTX.

More than 72,000 soldiers from both sides of the Atlantic Ocean were involved in the maneuvers, including approximately 17,300 Reforger troops from stateside active Army, National Guard and Army Reserve units. Two brigades from the West German armed forces, a battalion from the Luxembourg army and other U.S. Army, Europe (USAREUR), and U.S. Air Forces, Europe, personnel also participated, with the bulk of the soldiers coming from V Corps units.

The major V Corps units participating in the exercise included the Corps Headquarters, the 3rd Armored Division, the 8th Infantry Division (Mechanized), the V Corps Artillery, the 11th Armored Cavalry Regiment, the 3rd Support Command, the 130th Engineer Brigade, the 12th Combat Aviation Group, the 22nd Signal Brigade, the 205th Military Intelligence Group, the 2nd Military Police Group and the 22nd Personnel and Administration Battalion.

Reforger units included the 4th Infantry Division (Mechanized) from Ft. Carson, Colo., and the 197th Infantry Brigade (Mechanized) and the 1st Battalion



Air Force Security policeman A1C Warren Moore (far left) stands guard in a driving snowstorm at Ramstein Air Base, where many of the U.S.-based Central Guardian units landed. At left, armored personnel carriers of the attacking Orange forces under way, these belonging to the 3rd Armored Division's 1st Battalion, 36th Infantry.

(Ranger), 75th Infantry, both from Ft. Benning, Ga.

More than 3,300 Army Reserve and Army National Guard troops from 25 states also joined the exercise. More than 40 reserve components units were represented, with the smallest being the 49th Military History Detachment from Forest Park, Ill., with three persons, and the largest being the 2nd Battalion, 175th Infantry, from Dundalk, Md., and the 2nd Battalion, 181st Infantry, from Whitensville, Mass., both with more than 500 soldiers.

The basic mission statement for FTX Central Guardian was to jointly exercise NATO's Armed Forces to demonstrate its resolve to protect member nations and to highlight NATO's preparedness and willingness to face any hostile force threatening peace and freedom within the alliance. Underlying that mission was the requirement to test NATO's soldiers and equipment in a winter environment.

The test was overdue. During the last winter Reforger and corps-level exercise in 1979, the weather failed to cooperate. During that winter, the temperature rose dramatically soon after the start of the FTX, snow disappeared throughout the exercise area in Bavaria, and General Winter's ally, "General Mud," ruled the day.

To avoid excessive maneuver damage costs that would have resulted because of the ground conditions, that exercise ended early. Thus, winter 1979 was not a thoroughly realistic test for winter combat conditions, although troops did experience severely cold weather and adverse conditions that affected the reception, deployment and onward movement phases in the early days of Reforger '79.

With that gap in current knowledge, commanders, planners and soldiers on the line had a lot of winter-related questions: How will transportation flow? What fighting techniques need to be changed or added? What fuels need to be used to operate in cold weather? Can maneuver damage be limited or reduced? What is the level of cold-weather training needed to prevent cold-weather injuries?

The first problem to be tackled was the weather. From the corps commander's chair, options abounded with every consideration.

For example, if the weather were cold and snowy, port and airfield aerial operations would be hampered, but such conditions would certainly enhance tactical operations for maneuverability.

On the other hand, clear, sunny conditions would definitely enhance deployment operations, but with a thaw, tactical maneuvering would be jeopardized. In the middle ground between those two extremes, any condition which softened the ground would increase the potential for maneuver damage.

The need for information became paramount, and the innovative efforts to obtain it were both successful and invaluable in daily planning. Climatology briefings began about seven months before the exercise, and the V Corps Staff Weather Office worked closely with the G2 terrain analysis section to study and track conditions affecting the state of the ground. As a result, there was an accurate record of the three-month trend on ground conditions in the maneuver area as the exercise began.

In addition to this trend analysis, the 517th Engineer Detachment (Terrain) obtained weekly data and soil samples from a number of sites that represented all areas within the designated maneuver area. These engineer specialists compared actual soil moisture content with existing soil tables and trafficability information to develop an overall prediction of soil trafficability in each area.

This survey effort was intensified during the exercise with the addition of soil scientists from the U.S. Army Cold Regions Research and Engineering Laboratory from Hanover, N.H. These scientists conducted experiments using prototype solid-state soil sensors as a means of gathering data concerning the state of the soil.

The West German III Corps' civilian geologist was called upon to assist in the maneuver trafficability predictions. His vast knowledge of the soils and trafficability of the maneuver area was combined with the physical data collected by the 517th Engineer Detachment and the other scientists.

Using the parameters of soil type, temperature, elevation and moisture content, a daily map was then produced, depicting the maneuver area trafficability conditions as being green, amber or red. The decision on the level of maneuver to be permitted in each area was subsequently based on this map.

The color-coded system worked much as a traffic signal light: red stopped ma-



A Vulcan antiaircraft gun crew of the defending Blue forces scans the horizon for signs of the enemy.

LT. GEN. ROBERT L. WETZEL has been commanding general, V Corps, since 1984. After graduating from the U.S. Military Academy in 1952, he served at all levels of command in South Korea, Vietnam, West Germany and Europe. Gen. Wetzel is a graduate of the Infantry School, the Air Command and Staff College and the Army War College. He has a master's degree in business administration from George Washington University.



Sgt. William Patterson of the 3rd Armored Division's 143rd Signal Battalion helps set up a command post in a snowy clearing.

An assault bridging platoon of the 3rd Armored Division's Company A, 23rd Engineer Battalion, pauses to consult maps before moving to a new location.

neuver movement, amber restricted movement (usually to hard-surface roads) and green allowed free cross-country movement.

The accuracy of these predictions was checked each day by maneuver damage control teams, umpires and the V Corps staff. If conditions radically deteriorated or improved, changes in permissible maneuver levels were made on short notice.

These procedures were extremely effective, and known maneuver damage was notably less than that of any previous Reforger-related FTX.

The benefits of this accuracy and strict adherence to daily limitations also had a positive impact on community relations, since local farmers, landowners and citizens groups appreciated the care and concern for their countryside and could see that an honest effort was being made to prevent damage.

Beginning about six weeks before the start of the FTX, climatology data were updated with an actual long-range outlook at expected conditions in the exercise area. This outlook called for a colder-than-normal December and early January, with warming conditions later in January before a return to colder-than-normal temperatures in early February. This prediction by the Air Force staff weather personnel was uncannily accurate.





First Sgt. Ernst Beckius, a member of Company D of Luxembourg's Light Infantry Battalion, which operated on the northern flank of the Blue forces.

Although there were many convoys on the roads before, during and after Central Guardian, there were no U.S. fatalities associated with the exercise. This statistic is quite impressive considering the snowy, icy conditions and the number of vehicles on the roads—about 15,000 wheeled and more than 6,100 tracked vehicles—and the distances driven.

The 197th Infantry Brigade especially put in a great deal of road time, convoying their wheeled vehicles from the ports in Amsterdam to staging areas near Kaiserslautern and then into the main battle area. At times during the 197th Brigade's road movements, 1,000-vehicle convoys of both tracked and wheeled vehicles were on the roads in central West Germany, providing an ample test of drivers' skills and safety procedures.

During this movement phase of the exercise, weather did have an impact on the handling of equipment at the seaports, since freezing rain made the loading of the tracked vehicles from the 197th Infantry Brigade and other continental U.S. units onto rail cars very treacherous. Elsewhere, the weather dictated that greater care than normal be taken, causing additional expenditure of time to properly maintain both men and machines.

About five days before the start of the exercise, a detailed forecast was provided for the first week of maneuvers. That, too, proved to be exceptionally accurate, predicting unusually cold weather the first two to three days of the exercise, followed by normal temperatures which would begin to melt the snow cover. This melting caused the bare ground in most lower elevations to be exposed to above-normal temperatures by the end of the week, thus causing ground conditions to deteriorate.

That slow warming trend held into the second week of the exercise, and most of the southern portions of the maneuver area were red for trafficability through the last week in January.

From one perspective, the extremely cold and wintry weather in early January cooperated, in that it provided an excellent test of procedures and techniques involved in moving from home bases and POMCUS (prepositioned organizational materiel configured in unit sets) sites to field staging areas. In various locations at various times, soldiers were faced with snow, freezing rain, cold winds, icy roads, fog and reduced hours of daylight.

Armored personnel carriers of Battalion 133 of the West German 13th Armored Infantry Brigade—part of the Orange forces—stick to paved roads during the thaw at the end of the exercise.



The fact that there were so few accidents can in large part be attributed to the safety education program conducted in the months before the exercise. Safety films were distributed for viewing by all participants; all continental U.S. troops had to pass the necessary tests to receive a USAREUR driver's license; and all exercise vehicles were examined for mechanical soundness and had their brakes tested before they went on the road.

Additionally, military police from the 21st Support Command and V Corps, along with their West German counterparts *(feldjaegers)*, installed temporary route signs, passed out strip maps, manned circulation control points and continuously patrolled all highway routes.

Those efforts paid off, and by 21 January, all participating units were in position for the official start of the maneuver phase.

The scenario for the two-week maneuver was a familiar one. A simulated build-up of international tensions culminated in the Orange forces, played by the 3rd Armored Division and the 4th Infantry Division (Mechanized), crossing the assumed international border.

The Blue forces' 11th Armored Cavalry Regiment initially fought a covering force action before the 8th Infantry Division assumed the main battle. Several days after the start of hostilities, the 197th Infantry Brigade arrived in the vicinity of the main battle area, in much the same way that reinforcing units would in actual combat.

NATO allies also joined the fray. The Luxembourg Light Infantry Battalion, which brought over 300 soldiers, played as a Blue force for the entire exercise, operating in the northern part of the 8th Infantry Division sector. That area was conducive to light infantry operations and allowed the battalion to maneuver freely and conduct airmobile insertions.



The West German 13th *Panzer Grenadier* Brigade of the 5th *Panzer* Division played during the first week as part of the attacking Orange forces. At the end of week one, the 13th Brigade departed, and the 35th *Panzer Grenadier* Brigade, 12th *Panzer* Division, with a similar strength of over 3,100, joined the Blue forces for their programmed offensive operations.

The opening battles actually began with an innovative dismounted brigade night attack by the 4th Infantry Division. Given the steep, snow-covered terrain and water obstacles facing them, the initial evaluation of this concept would have indicated minimal chances for success.

The 4th Division planners, however, conducted extensive rehearsals at Ft. Carson before their deployment and tried to create an environment similar to the one that they would encounter within the attack phase. This prior training was advantageous because their night attack was quite successful. The soldiers penetrated the Blue covering force in sufficient strength to cause it to withdraw earlier than anticipated.

Also in the opening battles, well-executed night operations were followed by aggressive daylight maneuvers as the 3rd Armored Division thrust west. Those attacks involved the 3rd Armored's 1st and 3rd Brigades and the 13th *Panzer Grenadier* Brigade sweeping into Blue lines. Then, while the Blue forces were pinned down, the division's 3rd Squadron, 12th Cavalry, attacked northwest to isolate large elements of the defending Blue forces.

That aggressive spirit was typical throughout Central Guardian.

As the battles raged, another unique operation was tested under the free-flowing exercise conditions. This operation, called a reconstitution, was a centralized effort to refit and rebuild the 11th Armored Cavalry Regiment after the opening combat.

During the covering force battle, casualties were assessed through the umpire system. These casualties from the 11th Armored Cavalry Regiment and covering force artillery units were then evacuated through the medical evacuation system. This flow of patients tested procedures at unit aid stations, patient collection points, division clearing stations and a combat support hospital (CSH).

With about 425 simulated patients in the system, this part of the operation gave a busy workout to the ground evacuation assets and triage capabilities of the various medical organizations. Finally, after processing through the CSH, several hundred of the casualties were discharged to a replacement regulating detachment (RRD).

Seldom tested under such strenuous operational conditions, the RRD had the opportunity to look at current policies and procedures for receiving, processing, housing and reassigning new personnel for units in combat. Those new personnel include not only new replacements arriving through the personnel pipeline, but also those who have been evacuated for treatment of wounds and then declared fit for return to duty.

The staffing for the RRD came from far-flung elements of the 22nd Personnel and Administration Battalion, which normally has its soldiers manning personnel centers in the V Corps area.

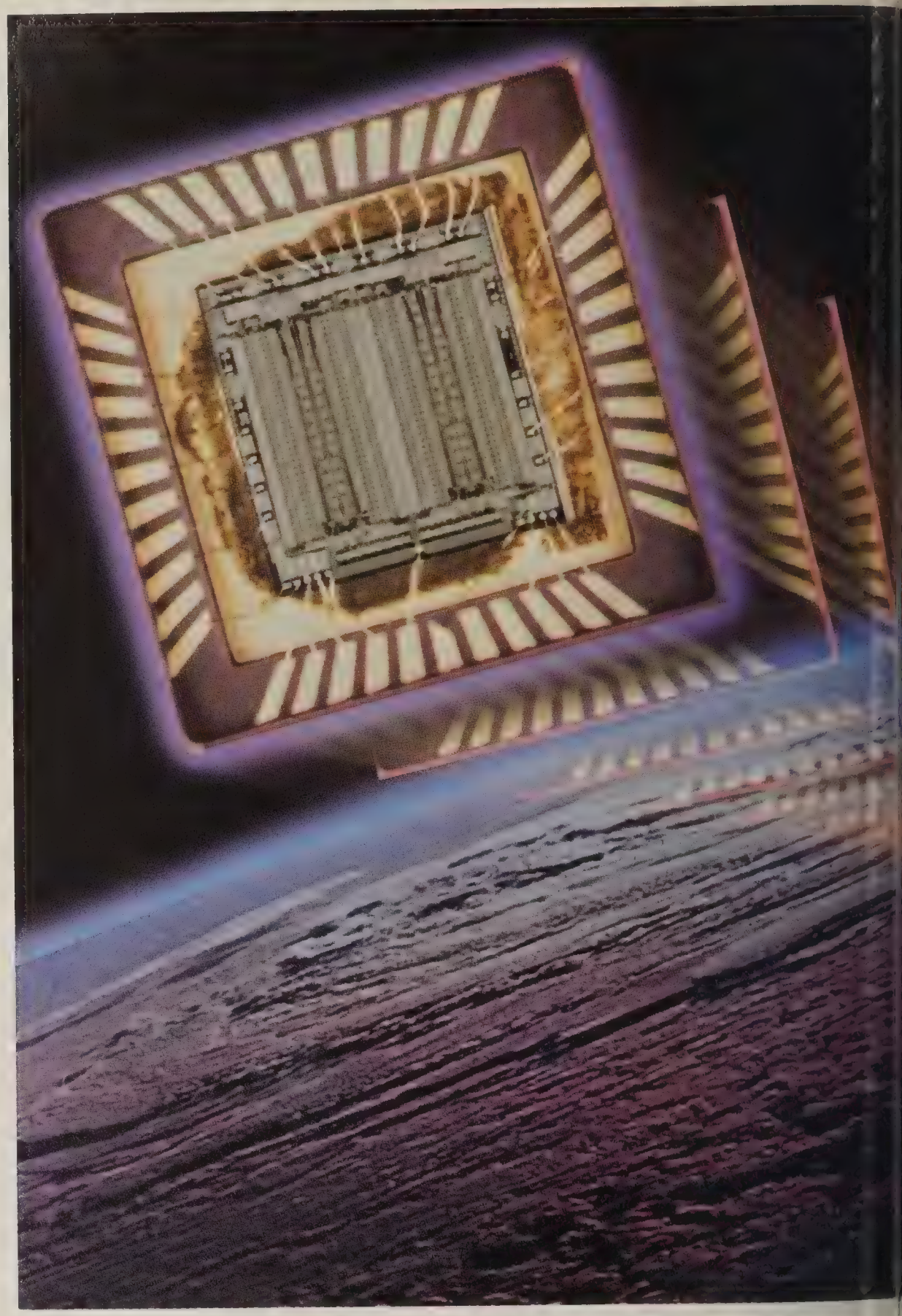
Coupled with the medical care and administrative processing of casualties and replacement personnel, the reconstitution center was also involved in the replacement of unit hardware.

This side of the reconstitution allowed the 3rd Support Command to actually conduct, for the first time in such a large-scale exercise, the myriad of activities required to reequip a regiment/brigade-sized unit.

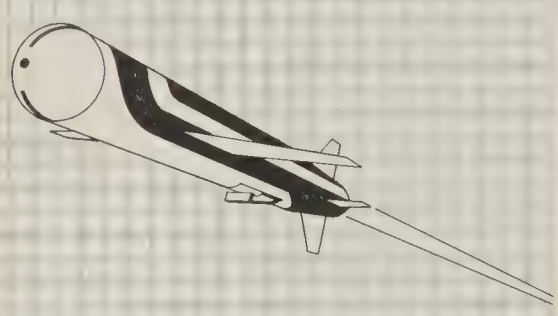
To accommodate the scheduled reconstitution exercise, some M1 tanks were removed from the 11th Armored Cavalry Regiment before the unit's departure from the covering force battle area. They were then used to simulate issuance of new vehicles from stockpile sources.

This concept allowed a realistic exercise of the procedures to issue and account for stockpile equipment by the reconstituted unit. This issuance procedure, coupled with centralized maintenance, refueling and rearming efforts, enabled both the 11th Armored Cavalry Regiment and the 3rd Support Command to elimi-

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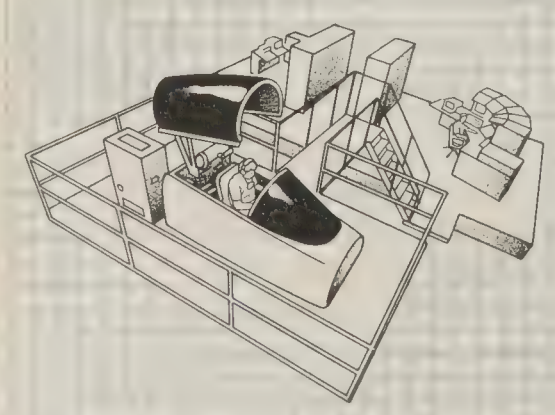
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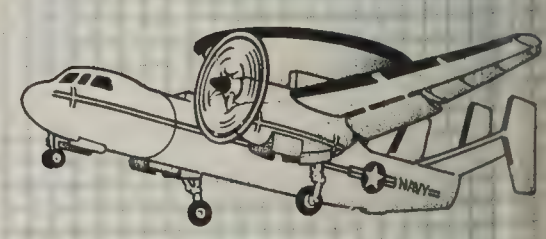
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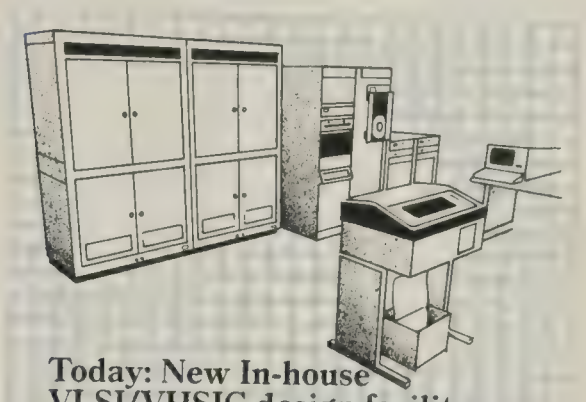


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nate bottlenecks and streamline requirements involved in reconstitution.

Elsewhere in the combat zone, on both the Blue and Orange sides, the need for coordinated, prompt engineer support of the battlefield was pointed out time and time again. Where such engineer support was assured, the tactical commander gained significant advantage with the combat multiplier effect that combat engineers contribute to combined arms warfare.

Where engineer coordination was lacking, tactical commanders were hampered in mobility operations, and their ability to inflict maximum damage on the opposing force was reduced. The need for coordination of obstacle execution on the battlefield was demonstrated the first week when the accelerated attack of Orange forces was able to bypass a number of obstacles before they were executed.

The need for a modernized combat engineer force was also clearly evident. Today's combat engineers lack many of the modernized systems needed to properly support tactical commanders. The engineer must be as mobile and as protected as his fellow combat arms partners. This was highlighted when many of the corps-level combat engineers rode into battle aboard five-ton dump trucks instead of armored personnel carriers.

Fortunately, this situation will soon be corrected, since the first conversion of a V Corps combat engineer battalion to tracked configuration started soon after Central Guardian.

The engineers' need for fast demolitions and an expedient method of breaching obstacles was highlighted in the various counterattacks conducted during the exercise. It became quite obvious that the breaching of minefields, the rapid crossing of gaps on the battlefield and the reduction of strong points are engineer missions that can be accomplished now only with Korean War technology, regardless of the weather.

The combat engineer vehicle (CEV) and armored vehicle-launched bridge (AVLB) are critical items of equipment for forces trying to attack through areas containing both friendly and enemy obstacles. More of them are needed. Even more critical are the needs for modern minefield-breaching systems and counterobstacle vehicles.

Another engineering specialty, bridge building, also proved its worth during the exercise. The use of the medium girder bridge (MGB) was especially effective in the second week when the 8th Infantry Division was counterattacking against Orange forces across the Lahn River. The width of the river exceeded the gap-crossing capability of an AVLB, and the fastest means of bridging available in the corps lay with its MGB company.

The division planners approached the counterattack by making a concentrated brigade attack in the central part of their sector. While this diversion was occurring, an armor battalion with the MGB company moved to the Lahn River approximately six miles to the south. The 100-foot span was put across the river in approximately 45 minutes with the assistance of a CEV.

The entire operation was unobserved by the Orange side until the bridge was virtually complete. What finally drew attention to the bridge was a large crowd of civilian onlookers who came to the construction site. That large crowd attracted the Orange forces, who saw the MGB near completion as they arrived.

By then, it was too late. The entire armor battalion was able to cross the river and seize a toehold on the Orange side before any Orange forces could react to the crossing attempt. The attack was a success because of the effects of the diversionary action coupled with the rapid emplacement time of the MGB.

While the weather conditions had little noticeable impact on the ebb and flow of the ground maneuvers, weather did have a very limiting effect on air operations, both Army and Air Force.

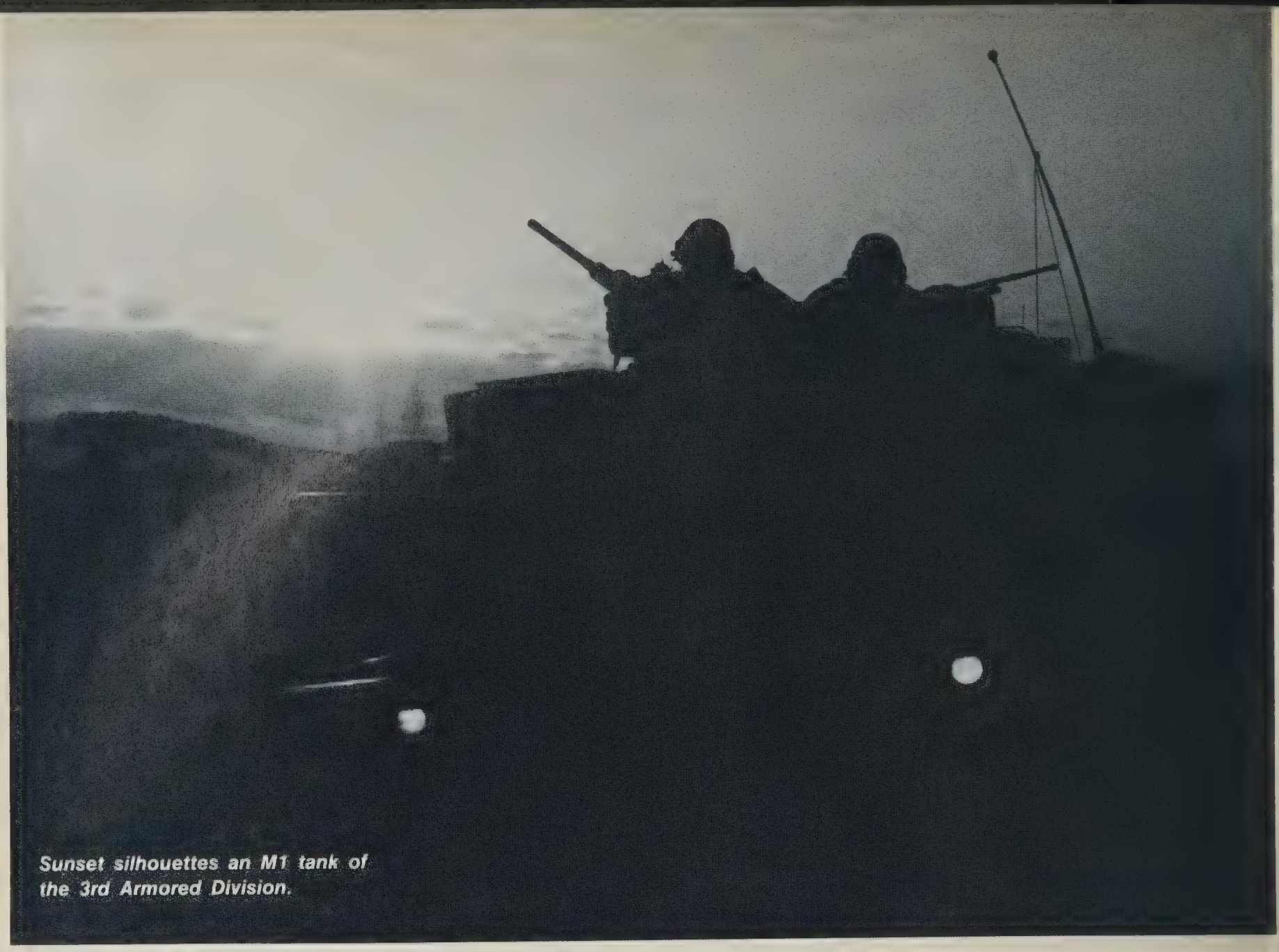
More than 560 Army helicopters participated in Central Guardian, flying a total of 7,360 hours. This was also the first major exercise in Europe in which a combat aviation brigade was employed.

The importance of the aviation brigade as a maneuver force was repeatedly validated throughout Central Guardian. Task organized with infantry, armor and artillery forces, aviation brigades and battalions simultaneously performed deep-battle, rear-area combat and economy of force operations in support of the ground scheme of maneuver.

Because the aviation brigade will be



Central Guardian provided a thorough test of field medical arrangements: simulated casualties from Blue covering force units are carried to a C–130 transport aircraft at a mobile air evacuation staging facility at Stuttgart, West Germany.



Sunset silhouettes an M1 tank of the 3rd Armored Division.

called upon to fight the battle across the entire division front, from the division rear to forward of the FLOT (forward line of own troops), reliable, long-legged communications have never been more critical. This was highlighted when the aviation rear-area combat task force was called upon to conduct cross-FLOT operations in a division sector while at the same time fighting the battle in the corps rear area.

Special operations utilizing UH–60 Black Hawk and CH–47 Chinook aircraft to insert Rangers and Army National Guard long-range reconnaissance patrols deep in enemy territory proved to be particularly challenging. Each operation was planned and executed with full J-SEAD (joint suppression of enemy air defenses) support.

Although operations were controlled at corps level, divisions provided safe flight corridors through their sectors with electronic warfare and artillery support for aircraft penetrating the FLOT. To provide real-time intelligence to the air assault force, airborne retransmission, utilizing RC–12 aircraft, was provided via manual links between the air assault flight lead, Guardrail and Quick Look aircraft, and the V Corps all-source intelligence center. The need for an automatic retransmission capability was clearly validated during these operations.

Central Guardian was truly an educational exercise and many important lessons were learned by aviation units that participated. As aviation enters its second year as a branch and begins transition to the "Army of Excellence" structure, many force structure and modernization issues previously identified were validated in the field environment.

As an example, a real need for roll-on, roll-off forward area refueling equipment for the CH–47 was documented. The current system of fuel blivets, too large to transport and too cumbersome to set up and maintain, will not be adequate to sustain operations forward of the FLOT. Also documented was the requirement for an additional battalion headquarters in the aviation brigade for command and control of the combat aviation company and the general support aviation company.

Central Guardian was also an excellent validator of the need for air-to-air tactics for helicopters. Cross-FLOT operations attempted without armed escort failed in almost every case. The armed escort provided not only essential security but performed effectively as a diversion for insertion of air assault forces.

Winter weather provided a special challenge to all participating aviation units. Snow-covered fields, sub-zero temperatures, low ceilings and poor visibility all combined to make Central Guardian a demanding exercise for aviators.

With safety the overriding concern, commanders at all levels ensured that crew members and ground support personnel adhered to proper operating procedures. V Corps enjoyed its best aviation safety record since Reforger '81.

Air Force support during the exercise was also hindered by the weather, but still proved effective. Allied air support was provided to both Blue and Orange forces and was centrally planned and controlled through the V Corps fire support element which integrated target planning and intelligence to determine target priority. The artillery section worked closely with the Air Force's air liaison officer and the colocated 601st Air Support Operations Center team to coordinate and direct air assets into the V Corps sector.

Because of the weather, only about 32 percent of the missions tasked for Blue and Orange forces were flown in the first week while, in the second week, the average only improved to approximately 40 percent.

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The Orange force 3rd Armored Division mounted a defense of the town of Rossberg, with tanks from the 2nd Battalion, 32nd Armor, and dismounted infantrymen like these from the 2nd Battalion, 36th Infantry.

Throughout the exercise, some of the busiest people in the maneuver area were the umpires. The 1st Armored Division provided the nucleus of the 4,000-plus soldier umpire force designated to control the exercise.

As in any exercise of this scale, the umpires were the critical factor in ensuring fair play and adherence to established rules of conduct. Their decisions resolved many engagements and kept maneuvers realistic.

As realistic as the combat operations were, maneuvering so many soldiers and vehicles throughout central West Germany was also a matter of concern.

Efforts began months in advance to inform government officials, news media representatives and other groups about the exercise, its purpose within the NATO mission and precautions being developed to limit damage and ensure safety.

That extensive campaign to inform the public and gain support was beneficial. Some groups were highly vocal and conducted local demonstrations, but they were far outnumbered by the outpouring of friendliness and support in every area that the participating soldiers went.

That friendliness was evidenced by the many instances of residents bringing cake, fruit, soup and pots of coffee to soldiers who had halted near their homes or farms. In some towns, residents invited soldiers to participate in soccer matches or tug-of-war contests, and they offered facilities to shower and replenish drinking water.

In the town of Bebra, the students at a beauty college offered free shampoos and hair treatments to female soldiers from a nearby medical battalion. At Hadamar, students from the local grade school invited several nearby soldiers to their class to talk about themselves, America, life in the Army and what they were doing in the maneuvers. It was an educational experience for both groups.

Near Marburg, Karl and Rosa Rhiel opened their hearts and the doors of their *gasthaus* to participants almost every night. Sometimes they allowed up to 50 soldiers to spend the night indoors, and they provided breakfast the next morning—all free.

When asked why she did it, Frau Rhiel said she was just showing her gratitude that it was the Americans who liberated her at the end of World War II instead of the Russians.

Those instances, and many more, abounded during the exercise—much to the delight of soldiers who were often cold and weary, but who always displayed that spark of enthusiasm and initiative that makes any exercise both challenging and rewarding.

There were many lessons learned from Central Guardian. Some of the more important were:

■ Primarily, we learned that we can attack, defend and provide all the support services necessary under very cold, adverse conditions.

■ We also learned that we now have a scientific, reliable method for examining the soil and terrain for maneuver purposes. This new procedure, besides having a direct application to our military capability, has also helped to prevent and reduce maneuver damage.

■ Our leaders learned how to protect their soldiers and prevent cold-weather injuries. Even with an aggressive program to identify all cold-weather injuries, we found only 68 cases through all phases of deployment, exercise and redeployment —almost all of them minor, first-degree injuries. No soldiers lost life or limb to the cold. This achievement reflects quite favorably on our training and the role of leaders at every level.

■ We relearned something we already knew. American soldiers are well trained, well led and well motivated. Even in the worst conditions in the most difficult areas of the exercise area, their morale was high and they were proud of their abilities.

■ Staff planners and leaders at every level of command also learned a lot about winter operations. A key factor here is the absolute need for more attention to detail and a consideration of everything that cold weather may have an impact on. Many of these considerations can be observed in the historical examples of other winter operations, but there is nothing like seeing firsthand the effects of snow, freezing rain, wind and other associated cold-weather maladies on a fighting force.

Overall, I think the accomplishments of every soldier involved in V Corps' Central Guardian are noteworthy and make our U.S. Army forces here in West Germany a testament to the NATO defense, at any season, under any conditions.



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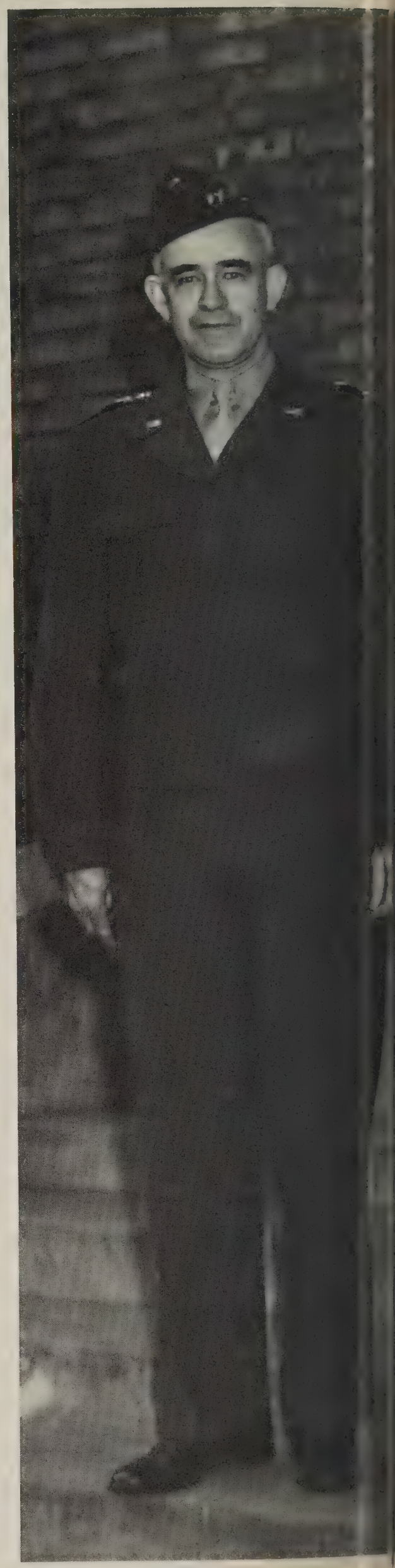
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Bradley-Patton: World War II's 'Odd Couple'

By Martin Blumenson
Contributing Editor



Lt. Gen. George S. Patton Jr. and Lt. Gen. Omar N. Bradley had an awkward relationship in the European campaigns of World War II. Although individual feelings have no place in military operations, the underlying, if rarely overt, resentment between these great soldiers had an adverse impact on the course of events.

In particular, during the momentous developments of August 1944, when the Allies endeavored to encircle the two German armies in Normandy, Gens. Bradley and Patton were less than well synchronized. Their difficulties with each other inhibited forming and implementing a single firm concept, maintaining a strict control over movements and displaying a clear direction toward the proper end.

The Allies had the opportunity to surround, trap and destroy the Germans in Normandy. Had they succeeded in doing so, they would probably have brought the war in Europe to a victorious close in 1944. The Allies came close to sweeping the German armies from the field and in the process gained a great triumph.

In the end, however, a substantial part of the German forces escaped to fight again. The losses they inflicted on the Allies at Arnhem, in the Hürtgen Forest, during the Battle of the Bulge and elsewhere illustrated the extent of their survival.

Why the Allies failed to close the Falaise pocket early enough to bottle up all the Germans has been explained many times and on various grounds. The rea-



In the late summer of 1944, the Allies missed a chance to perhaps shorten the war in Europe by failing to close the Argentan-Falaise gap and permitting most of the German forces that had opposed the Normandy invasion to escape. The reasons are still debated, but one that has been given little weight was a peculiar command structure that placed the two top U.S. field commanders in uncomfortable positions.

sons given include the skill of the German soldiers, the inability of the Allied coalition command to react with sufficient cohesion and speed, the hesitation and caution of certain commanders and the lure of conflicting Allied objectives.

No one has ever before considered the personal Patton–Bradley equation as a factor. Their problem of accommodating their distinctly different styles and outlooks was a contributory cause of why the Allies faltered.

The function of command is, essentially, the exercise of authority. Subordinates may, of course, question and discuss, advise and suggest, even try to persuade; but once the commander reaches his decision, no further debate is permitted; everyone has the duty to execute the commander's desire.

Two implicit conditions usually support the commander's absolute authority. He is generally more senior in rank and more experienced in the work to be performed.

There are exceptions. Gen. Dwight D. Eisenhower, the Allied commander in chief in the Mediterranean and European theaters, was notably junior to and less experienced in combat than some of his subordinates, for example, Field Marshal Sir Bernard L. Montgomery. Part of Gen. Eisenhower's difficulties with Field Marshal Montgomery came from this source. It rankled Field Marshal Montgomery to accept Gen. Eisenhower's senior status.

Maj. Gen. Ernest N. Harmon, commander of the 2nd Armored Division in North Africa, was another case. Dispatched by Gen. Eisenhower from Morocco to Tunisia to take temporary command of the Americans battling at Kasserine Pass, Gen. Harmon, a rough and ready customer supposedly less than sensitive, was uncomfortable with Maj. Gen. Orlando Ward, who commanded the 1st Armored Division.

"Ward," Gen. Harmon said gruffly, trying to conceal his embarrassment, "I'm about one thousand files behind you," meaning that he was junior to Gen. Ward in the Regular Army, "but these are my orders and that's how it is." Gen. Harmon commanded; Gen. Ward graciously obeyed.

In Italy, Lt. Gen. Mark W. Clark, the Fifth Army commander, had several older corps commanders under him, among them Maj. Gen. Geoffrey Keyes, Maj. Gen. John P. Lucas, and Maj. Gen. Willis D. Crittenberger, all of whom served Gen. Clark faithfully. Maj. Gen. Ernest J. Dawley, the VI Corps commander at Salerno, however, was unable to stifle his resentment. Savagely calling both Gens. Clark and Eisenhower "boy scouts," thus referring to their relative youth and combat inexperience, Gen. Dawley had to be relieved in the interest of preserving the chain of command.

Imposing junior commanders over more senior officers usually worked without friction. A partial explanation lies in the power of the traditional military discipline. Furthermore, rarely was a junior placed over a senior who had formerly

commanded him. Field Marshal Montgomery had never commanded Gen. Eisenhower, Gen. Ward had never directed Gen. Harmon, and Gens. Keyes, Lucas, Crittenberger and Dawley had never had Gen. Clark under their command.

This is what makes the relationship between Gens. Patton and Bradley so curious. In North Africa and Sicily, Gen. Bradley was Gen. Patton's direct subordinate. In Europe, Gen. Bradley was Gen. Patton's immediate boss. Both men were uncomfortable in their new positions.

In Tunisia, Gen. Patton temporarily commanded the II Corps, and Gen. Bradley was his deputy corps commander. When Gen. Patton departed to prepare the invasion of Sicily, Gen. Bradley succeeded him in command of the corps. In the Sicilian campaign, Gen. Patton commanded the Seventh Army; Gen. Bradley, under Gen. Patton, commanded the II Corps.

The association was normal. Gen. Patton, U.S. Military Academy class of 1909, was considerably senior to Gen. Bradley, who graduated in 1915. Gen. Patton also had much more combat experience. In World War I, while Maj. Bradley served in the United States, Lt. Col. Patton commanded the American brigade of light tanks in France and fought in the St. Mihiel and Meuse-Argonne offensives.

In World War II, Maj. Gen. Patton participated in the North African invasion, landed his I Armored Corps in Morocco and captured Casablanca. In Tunisia, Gen. Patton directed the II Corps in the aftermath of the battle of Kasserine Pass and gained victory at El Guettar, as well as his third star.

Gen. Bradley entered combat as a major general and as Gen. Patton's understudy. After Gen. Patton left, Gen. Bradley led the corps in the final battles in North Africa and captured Bizerte. Together, they fought in Sicily, Gen. Patton as the senior, Gen. Bradley as his junior.

The reversal of positions was foreshadowed shortly thereafter, in the summer of 1943. With the cross-Channel attack, code named Overlord, scheduled for the following spring, Army Chief of Staff Gen. George C. Marshall instructed Gen. Eisenhower to send an officer to England to take charge of the American preparations.



Gen. Omar N. Bradley (right), commanding the 12th U.S. Army Group, confers with Gen. Dwight D. Eisenhower (left), the supreme allied commander, and Maj. Gen. Louis A. Craig, commander of the 9th Infantry Division.

Among those who were close to Gen. Marshall, Gen. Patton was the obvious choice. He was the most senior and the most experienced American battle general. By his exploits in Tunisia and Sicily, Gen. Patton had attained the status of a star, well known and widely admired by the American and British publics. His reputation as a driving leader who spurred his troops to triumph was well established.

Unfortunately, because Gen. Patton had lost his self-control and slapped two soldiers in a hospital, Gen. Eisenhower questioned Gen. Patton's judgment. Despite his expertise, his battle achievements and his seniority, Gen. Patton was perhaps too impulsive for the sensitive task of coordinating the American effort with the British.

Also one of Gen. Marshall's favorites, Gen. Clark was a logical candidate for the post. He worked well with the British and was admired by Prime Minister Winston Churchill. Unfortunately, he was about to lead his Fifth Army in the invasion of Italy at Salerno, and he could not be spared.

Gen. Eisenhower selected Gen. Bradley, who was then a rather obscure corps commander. He, too, was well thought of by Gen. Marshall. For Gens. Marshall and Eisenhower both, Gen. Bradley was untemperamental and solid. He could hardly match Gen. Patton's flair and aggressive push, but he was competent, balanced and prudent.

Gen. Bradley traveled to England in September and began to organize the First Army and what would later be known as the 12th Army Group headquarters. As plans developed for the Normandy landings, Gen. Bradley's tasks became clear.

He would take the First Army ashore on D-Day. When another American army came to France to join the American forces on the continent, Gen. Bradley would step up to command the army group.

In January 1944, Gens. Marshall and Eisenhower designated Gen. Patton to command the follow-up army. Gen. Patton, an army commander, would be directly under Gen. Bradley at the army group. This is what happened on 1 August, 1944, when Gen. Patton's Third Army became operational in Normandy. Gen. Bradley turned over the First Army to Lt. Gen. Courtney H. Hodges and

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MARTIN BLUMENSON, a well-known military historian specializing in World War II, Europe, is the author of a new book, Patton: The Man Behind the Legend, 1885–1945.

then moved up and assumed command of the 12th Army Group, thus becoming Gen. Patton's immediate superior.

From the point of view of seniority and battle experience, the whole Allied command structure in Normandy was peculiar. Gen. Eisenhower, the supreme Allied commander, was junior to and had less combat experience than everyone except Gen. Bradley.

A member of Gen. Bradley's U.S. Military Academy class, Gen. Eisenhower graduated six years after Gen. Patton, and, like Gen. Bradley, spent World War I in the United States. Then-Lt. Col. Eisenhower trained tankers near Gettysburg, Pa. After the war, when then-Maj. Patton's (his combat rank of lieutenant colonel having been temporary) tank brigade returned from France to Camp Meade, Md., Col. Eisenhower moved his units there. In the consolidated tank corps, Patton was a colonel. Col. Eisenhower served under Col. Patton.

In 1940, when Brig. Gen. Patton took command of the 2nd Armored Brigade, then of the 2nd Armored Division, he urged Col. Eisenhower to transfer to the tanks and become his chief of staff or a regimental commander.

Col. Eisenhower followed a different path to high rank and responsibility, and in 1942, he was Maj. Gen. Patton's boss in North Africa. Although Gen. Patton sometimes grumbled privately in his diary over what he considered to be then-Lt. Gen. Eisenhower's deficiencies, he accommodated himself to Gen. Eisenhower's status and was completely loyal.

In Normandy, Gen. Eisenhower temporarily delegated the direct command of the Allied ground forces to Field Marshal Montgomery. During the first three months of the invasion, Field Marshal Montgomery directed the Allied armies on the continent. Gen. Eisenhower was there much of the time but more or less as a passive observer, available for advice and for tacit approval of decisions made by Field Marshal Montgomery and Gen. Bradley.

Gen. Bradley, the senior American commander in France, was junior to Gen. Hodges, who took over the First Army on 1 August and who had fought in France in 1918. Gen. Hodges had flunked out of the U.S. Military Academy, had enlisted in the Army, and had gained a commission before Gen. Bradley graduated from West Point. In 1941, then-Brig. Gen. Hodges was the post commander at Ft. Benning, Ga. Succeeded by then-Brig. Gen. Bradley in that position, then-Maj. Gen. Hodges went to Washington and became the prestigious chief of infantry.



Lt. Gen. George S. Patton Jr. (left), newly installed in command of the II Corps, studies a map with Gen. Eisenhower at the outset of the U.S. offensive in southern Tunisia, 16 March, 1943.

Despite his seniority, Gen. Hodges was no problem for Gen. Bradley. No prima donna, Gen. Hodges was workmanlike. He had little flair for personal publicity. Quiet and solid, he had few tactical ideas. Unlike Gen. Patton, he contributed little when commanders gathered at Gen. Eisenhower's or Gen. Bradley's behest to discuss strategy. Because Gen. Bradley had commanded the First Army, he was more partial to it, and he tended to supervise Gen. Hodges closely.

For Gen. Patton, Gen. Eisenhower was three echelons above him and not a factor in the unfolding situation. Field Marshal Montgomery, two levels above Gen. Patton, was also remote and, furthermore, issued his orders through Gen. Bradley. It was Gen. Bradley who defined Gen. Patton's missions and roles, and Gen. Patton found it difficult to adjust to his new status, below his subordinate of the previous year.

Military historians have, of course, remarked on the change in positions between Gens. Patton and Bradley. They have made little of the arrangement and have never questioned the relationship. The two men, they have explained, apparently worked in harmony.

Gen. Patton, they have said, was a good soldier and completely devoted to the chain of command. Gen. Patton wanted to fight so badly that he would have accepted command at any level under anyone. Finally, Gens. Patton and Bradley had such personal affinity and mutual respect that it was easy for them to cooperate loyally in the interest of winning the war.

Much of this is undoubtedly true. From the moment they met in 1941, Gens. Patton and Bradley liked each other. In 1941, Maj. Gen. Patton commanded the 2nd Armored Division at Ft. Benning, and Brig. Gen. Bradley was the infantry post commander. A year later, when Gen. Patton had the I Armored Corps and then-Maj. Gen. Bradley had the 28th Division, Gen. Patton wrote, "My dear Omar . . . I never was associated with anyone who more wholeheartedly and

generously cooperated with everything we worked on together."

"Omar is good," Gen. Patton reported from Tunisia in letters to Gens. Eisenhower and Marshall, as well as in his correspondence to his wife, "Omar did a swell job." He praised Gen. Bradley's "magnificent work" in Sicily and called him "a very sound" soldier. For his part, Gen. Bradley demonstrated his loyalty to his boss Gen. Patton by locking in his safe the damaging medical report of the slapping incidents.

A distinct change in feelings came soon after Gen. Bradley's departure from Sicily for England. Gen. Patton began to understand Gen. Bradley's future place in the American command structure. Virtually certain of Gen. Bradley's ultimate climb to army group command, a post that Gen. Patton had hoped to obtain, Gen. Patton was profoundly disappointed.

In chagrin, he confided some denigrating lines to his diary. "Bradley," he wrote, "is a man of great mediocrity." He cited Gen. Bradley's inability to promote discipline and his operational timidity. Yet he ended his unflattering portrait in more objective fashion. "I consider him," he said, "among our better generals."

In England, the two commanders saw each other infrequently. Both were busy. When together in public, they were cordial.

On 6 June, Gen. Bradley put his First Army ashore in Normandy, then captured Cherbourg and fought the wearing battle of the hedgerows. In July, Gen. Bradley prepared what would be his masterstroke, the Cobra attack, which would penetrate the German defenses.

Gen. Patton, having languished in England, fearing that the end of the war would come before he could enter combat again, arrived on the continent early in July, a month after D-Day. He was burning with eagerness and ambition.

Unemployed almost a year, ever since Sicily, having been in the doghouse after the slapping incidents, Gen. Patton was bursting with desire to fight again. He wished to seize the headlines once more; he needed to restore his reputation. Yet he tried to be properly diffident in his new role as Gen. Bradley's subordinate, for he was always respectful of the chain of command.

Unable to restrain his high spirits on at least one occasion, Gen. Patton irritated Gen. Bradley, who resented Gen. Patton's apparent familiarity. Gen. Bradley set Gen. Patton straight. Seeking to establish the formal and traditional distance or aloofness between senior and subordinate, Gen. Bradley said, "You know, George, I didn't ask for you."

The point was that Gen. Patton's presence in Normandy was the result of a decision by Gens. Marshall and Eisenhower, who saw Gen. Patton, a proved combat leader, as indispensable for the successful prosecution of the war in Europe. Gen. Bradley would have preferred a younger, less flamboyant officer, a subordinate commander more amenable to Gen. Bradley's direction, less headstrong in character, someone more like Gen. Hodges.

As the top American commander on the continent, Gen. Bradley was attracting wide public notice. He was in the process of winning his reputation. What helped was the absence of Gen. Patton's name in the newspapers.

Gen. Patton had fulfilled an important role before the invasion as the mythical commander of the fictitious 1st U.S. Ar-



Troops of the 30th Infantry Division's 120th Infantry reenter Mortain, France, after helping to defeat the German counterattack toward Avranches in August of 1944.

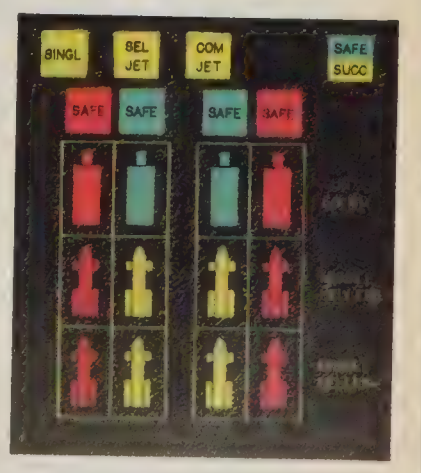


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my Group, an organization designed for German consumption. The Germans waited for this nonexistent army group, supposedly headed by Gen. Patton, to cross the English Channel in the main Allied invasion. Their respect for Gen. Patton led them to hold the considerable forces of the Fifteenth Army across from Dover in the Pas de Calais to await landings that never came.

To continue the deception, Gen. Eisenhower ordered Gen. Patton's whereabouts to be unreported and secret. Not until mid-August would Gen. Eisenhower permit Gen. Patton's accomplishments and activities to be mentioned.

Gen. Patton chafed with impatience as Gen. Bradley fought in the hedgerows and then launched on 25 July the concentrated Cobra blow that not only pierced the German defenses but also demolished the German left flank. This brought the town of Avranches, the entrance into Brittany, within view.

Because Gen. Patton's Third Army had the initial task of conquering Brittany, Gen. Bradley asked Gen. Patton on 27 July to direct unofficially the corps leading his army into the province.

Joyously, Gen. Patton took hold. Moving two armored divisions through the American infantry divisions, Gen. Patton placed them at the head of the advance, which spurted forward. With Avranches secured on 31 July and the way into Brittany open, Gen. Patton's Third Army became operational on the following day, as Gen. Hodges assumed command of the First Army and Gen. Bradley took command of the 12th Army Group.

Gen. Patton started westward into Brittany as projected, but the disintegration of the German left flank prompted Gen. Eisenhower, Field Marshal Montgomery and Gen. Bradley to alter the preinvasion plans. Instead of sending the entire Third Army into Brittany, they decided that a single corps was sufficient.

The bulk of Gen. Patton's army was to go east, toward the Seine River, and south, to the Loire River. Gen. Patton complied. With the VIII Corps heading westward, Gen. Patton moved the XV Corps eastward around the German left flank forces. He then pushed the XX Corps to the south and the Loire River. Before he could start the XII Corps, the XV Corps, having advanced with exceptional speed, was 75 miles southeast of Avranches and at Le Mans.

During this week-long period, a Patton–Bradley contretemps arose. Without consulting Gen. Patton, Gen. Bradley changed some of Gen. Patton's dispositions. When Gen. Bradley informed Gen. Patton of what he had done, he did so apologetically.



Gen. Omar N. Bradley at the map board with Field Marshal Sir Bernard L. Montgomery, commander of the British 21st Army Group, who remained in charge of all Allied ground forces in northern France through the end of August 1944.

Gen. Patton was outraged but said little, perhaps because of Gen. Bradley's implicit regret, possibly because Gen. Patton regarded Gen. Bradley's interference as justified, more probably because the incident was minor. But in a remark that would have been normal in their previous relationship, he warned Gen. Bradley against what he called "getting the British complex of overcaution."

The arrival of the XV Corps at Le Mans provoked an extraordinary development. According to the Overlord plan, the Allied objective during the first 90 days of the campaign was to seize a lodgment area—that part of France bounded on the south by the Loire River and on the east by the Seine River and the Paris–Orleans gap. In possession of that vast region, the Allies were to pause, build up their resources and launch an offensive to reach Germany.

In swift succession, three events altered the Overlord concept. The Germans attacked westward in an attempt to restore their nonexistent left flank and were stopped at Mortain. The Canadians launched a drive from Caen southward toward Falaise and were soon bogged down.

Gen. Bradley, probably after a conversation with Gen. Patton, had the bold idea of surrounding the German armies in Normandy. If the Canadians reached Falaise, and if the XV Corps, instead of continuing east, turned north from Le Mans toward Argentan, the Allies would be on the verge of encircling the German forces. Gen. Eisenhower and Field Marshal Montgomery agreed, and Gen. Patton received instructions to send the XV Corps north from Le Mans.

Gen. Patton preferred a deeper hook. He requested permission to push the XV Corps all the way to the Seine River before turning to the north, "but Bradley," he wrote, "won't let me." His superiors were concerned about overextension and danger.

"If I were on my own," Gen. Patton wrote to his wife, "I would take bigger chances than I am now permitted to take. Three times I have suggested risks and been turned down."

With no alternative, but recognizing the prize awaiting the Allies if they acted quickly and took Argentan and Falaise, Gen. Patton moved the XV Corps north-

ward. Slashing forward against virtually no resistance, the corps reached the outskirts of Argentan in five days.

Although the corps had crossed the army group boundary separating the Anglo-Canadian and American forces, Falaise, which the Canadians had yet to reach, lay 15 miles ahead to the north. In view of the lack of opposition facing the XV Corps, there was every possibility of its getting to Falaise and trapping the bulk of the German forces in Normandy.

Adolf Hitler, against the advice of his military men, who were aware of the snare forming about them and who wished to retire from Mortain and Normandy, stubbornly insisted on renewed efforts to restore the left flank. As a consequence, the two German armies in Normandy were west of Falaise and Argentan.

Instead of permitting the XV Corps to go through Argentan to close the pocket at Falaise, Gen. Bradley, on the night of 12 August, told Gen. Patton to halt. Upset, Gen. Patton argued. If they were to trap the Germans, they had to move decisively and without hesitation. Gen. Bradley was adamant, preferring, as he said, a solid shoulder over a broken neck at Argentan.

In Gen. Bradley's view, the XV Corps had exposed flanks, the First Army was more than 50 miles away, and the Germans were pulling back from Mortain and planning to attack the XV Corps. There was nothing for Gen. Patton to do except follow Gen. Bradley's order. He stopped the XV Corps from further advance to the north. "I am sure," he wrote in his diary, "that this halt is a great mistake."

After pondering for a day, Gen. Patton revised his estimate of what was possible. To him, Field Marshal Montgomery was indecisive, Gen. Bradley was cautious, and the British and Canadians were too slow. The Germans retiring from Mortain would probably escape. The chances were that the Allies would fail to surround them at Falaise and Argentan. In that case, the Allies could head the Germans off at the Seine River.

Gen. Patton persuaded Gen. Bradley to let the XV Corps headquarters and two of its divisions, as well as the XX and the XII Corps, go eastward. "It is really a great plan, wholly my own," Gen. Patton wrote in his diary, "and I made Bradley think he thought of it."

Gen. Bradley, without informing Field Marshal Montgomery, uncomfortably acquiesced to Gen. Patton's suggestion. Leaving three divisions in the Argentan area, Gen. Patton sent the rest of the XV Corps off at a gallop, together with the other two corps.

Two days later, on 16 August, the Canadians finally reached Falaise. On that day, Adolf Hitler, reacting not only to the danger of losing his two armies in Normandy but also to the Allied invasion of southern France on the previous day, at last gave permission for the German forces in the Argentan-Falaise pocket, which was still not closed, to withdraw.

Gen. Patton then had his XV Corps at Dreux, his XX Corps at Chartres and his XII Corps at Orleans, all three facing eastward. It would have been relatively simple to turn them all to the north to cut off at the Seine River the Germans extricating themselves from the pocket.

Instead, Field Marshal Montgomery directed the Canadians to move south of Falaise to Trun; he asked Gen. Bradley to push the Americans north from Argentan to meet the Canadians.

Gen. Bradley was embarrassed. Gen. Patton had left three divisions at Argentan but no corps headquarters to direct them. Apprised of Field Marshal Montgomery's request, Gen. Patton immediately sent his chief of staff, Maj. Gen. Hugh J. Gaffey, and several key officers to the locality as a provisional corps headquarters. He instructed Gen. Gaffey to attack on the following morning at Trun.

Gen. Gaffey formulated a plan and was ready to jump off when Maj. Gen. Leonard T. Gerow, whose V Corps headquarters had been pinched out 100 miles away, arrived with orders from Gen. Bradley to take over.

Confused, Gens. Gaffey and Gerow telephoned Gen. Patton. Concerned by the necessity for speed to trap the Germans at Trun, Gen. Patton suggested that Gen. Gerow let Gen. Gaffey get off his attack that morning and take over at an appropriate time later.

Gen. Bradley, however, was in the process of changing the boundary between the First and Third Armies to place the Argentan area under Gen. Hodges. Because Gen. Gerow's corps belonged to Gen. Hodges, Gen. Gerow was to attack, not Gen. Gaffey. As Gen. Gaffey returned to the Third Army headquarters, Gen. Gerow postponed the advance to Trun and drew his own plan. There was no American movement toward the projected meeting place with the Canadians until the following day, 18 August.

In sum, by stopping Gen. Patton from continuing to march north through Argentan toward Falaise on the night of 12



The destruction wrought by artillery and air attacks is evident in this aerial photo of Argentan, made two days after the last of 35,000 escaping German troops had fled the Falaise pocket.



M4-series Sherman tanks formed the backbone of the Allied armored forces in the summer of 1944.

August, Gen. Bradley gave the Germans five precious days, until 18 August, to re-form their dispositions. Allowed by Adolf Hitler on 16 August to withdraw, the Germans skillfully retired from the pocket during four nights, from 16 through 19 August. When the Americans and Canadians met at Trun, most of the Germans had escaped.

Was Gen. Patton able to cut them off at the Seine River? He sent a division of the XV Corps across the Seine on the night of 19 August. He requested permission to cross the other division, then to sweep down the right bank to the sea with both. Gen. Bradley refused. He instructed Gen. Patton to move the other division down the left bank, where the Germans were erecting defenses that slowed the American effort.

Gen. Patton was disgusted. The Germans managed to get a substantial part of their troops out of the Argentan-Falaise area and were crossing the Seine River with little interference.

Could they be cut off again? Gen. Patton suggested a third hook to trap the Germans farther north, along the Somme River. This too was rejected. An American thrust to the English Channel, Gen. Bradley said, would drive across the projected avenues of advance for the British and Canadian armies.

Now Gen. Patton was dejected. Field Marshal Montgomery and Gen. Bradley had failed to capitalize on the marvelous opportunity to destroy the two German armies in Normandy.

Renouncing further interest in trapping the Germans, Gen. Patton was happy to set out at full speed for Germany. This was because Gen. Eisenhower, in possession of the lodgment area and preparing to take over Field Marshal Montgomery's position at the head of the ground forces, decided not to pause at the Seine River in accordance with the preinvasion plans. Unleashing his armies, Gen. Eisenhower sent them streaming ahead in pursuit of the Germans retiring to Belgium, Luxembourg and Germany.

The battle of Normandy was a great Allied triumph. But all of the Allied principals, the high commanders, were disappointed. A surprisingly large number of Germans had skillfully avoided almost certain destruction.

The Allies had failed to demonstrate the cohesion required for a complete victory. Field Marshal Montgomery had been unable to keep operations under his firm control. Gen. Bradley had succumbed to his inexperience in directing operations of such magnitude, and he had not played it straight with Field Marshal Montgomery. Gen. Eisenhower, lacking what is sometimes called a feel for the battlefield, had refused to intervene.

Only Gen. Patton understood the vital need to surround and destroy the Germans, at Argentan-Falaise, at the Seine River or at the Somme River. That was the key task. His relatively junior status prevented him from exercising the concept, direction and control needed to sweep the Germans from the field.

The Bradley–Patton relationship improved during the remaining months of the war. In part, the simple passage of time enabled both men to accommodate themselves better to the command structure and to settle the nature of their association. In part, Gen. Bradley recognized his errors in Normandy and listened more closely to his subordinate's advice.

Yet throughout the rest of the campaign, Gen. Patton constantly complained in the privacy of his diary of the caution displayed not only by Gen. Bradley but also by Gen. Eisenhower. A far bolder strategy, in his opinion, would have brought final victory much more quickly.

Ironically, the slapping incidents denied Gen. Patton the army group command. In that post, he would have been Gen. Eisenhower's major operational advisor. As such, he would no doubt have shaped the events far differently and in his image. Instead, Gen. Eisenhower preferred his classmate Gen. Bradley.

The uneasy feelings between Gens. Patton and Bradley in August 1944, although hardly the main factor, contributed to the lost opportunity in Normandy. The German escape prolonged the conflict. It took the Allies eight more months of fighting to win the war in Europe.

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Nitze, Army Leaders Speakers at Meeting

By Eric C. Ludvigsen
Associate Editor
and
Philip J. Fick
Assistant Editor

For the sixth year in a row, the Association's Annual Meeting broke all attendance records, with more than 23,000 on hand for at least some part of the crowded three-day program of events at the Sheraton Washington Hotel, Washington, D.C. Attendance has, in fact, more than doubled since 1980, and the average for the decade is nearly three times the average attendance during the 1970s.

As in past years, the core group of attendees could be found in delegations from most of the Association's 139 domestic and overseas chapters and members of AUSA-sponsored ROTC companies; much of their activity centered around committee meetings, workshops, seminars, AUSA region meetings and the Association's annual business meeting.

Thousands of others—soldiers, Army civilian employees and friends of the service—were on hand for a quick look or a more detailed examination in the vast exhibit halls, where 167 displays of military weapons, equipment and technology were mounted by 182 companies. Displays by Army commands, agencies and units were also prominent, filling the exhibition hall foyer and lining the corridors.

More than 2,700 people were on hand for the George C. Marshall memorial dinner on the final evening; they witnessed the award of the 1985 George C. Marshall Medal, the Association's highest distinction, to Paul H. Nitze, special advisor to the President and secretary of state on arms control matters. Mr. Nitze, who was honored for a career in public service that began in 1941, reminisced about working with Gen. Marshall, at the



Record crowds were on hand for a full and varied program at the Association's 1985 Annual Meeting.

Paul H. Nitze

/ar Department at the outset of World /ar II and, after the war, at the State epartment.

"One of Gen. Marshall's frequent adonitions to us," he said, "was: 'Be sure ou understand what the problem is, en deal with it—don't fight the probm.' " The principle should be kept in ind, he added, in assessing the Soviet nion's autumn counterproposal in the uclear arms negotiation in Geneva.

While the Soviet call for 50 percent ts in "relevant" nuclear delivery vehies and a reduction to 6,000 "nuclear arges" on the ones remaining "is superficially appealing," Mr. Nitze said, "a closer look at this proposal indicates that it is blatantly one-sided and destabilizing."

The central "problem," as it has been for some years, he added, "is the increasing threat to the stability of the strategic balance that has resulted from the massive Soviet offensive nuclear buildup of the past decade, at a time when the United States was exercising considerable restraint." The "huge Soviet ballistic missile force" he said, "which includes hundreds of large, accurate, multiple-warhead ICBMs (intercontinental ballistic missiles)" is "now capable of threatening virtually the entire range of targets in the United States that comprise the fixed, land-based portion of our retaliatory forces."

Yet the Soviet counterproposal, Mr. Nitze said, would force a U.S. choice between retaining a central strategic deterrent that is already menaced by Soviet weapons and giving up much of its forward-based tactical nuclear and conventional air and naval forces; for "the Soviets define as 'relevant' those systems capable of striking the homeland of the other side." Thus, he explained, there would have to be deep cuts in U.S. "longer-range INF (intermediate nuclear force) missiles, dual-purpose aircraft in Europe and Asia and . . . on all our aircraft carriers," weapons that are "positioned as they are to offset an unprovoked threat to our allies, not as part of our intercontinental deterrent."

The Soviet definitions, he continued, include "the gravity bombs and short-range attack missiles carried by our bombers and dual-purpose attack aircraft." "Such weapons are not equivalent" to ICBM warheads, "since aircraft must contend with unconstrained air defenses while ballistic missile defenses are strictly limited."

Meanwhile, Mr. Nitze said, "all comparable Soviet systems, which number in

the thousands," would be excluded, "because they primarily threaten our European and Asian friends and allies rather than the United States itself." Also, the proposed Soviet framework is drawn so as to "avoid reductions in their large accurate" multiple-warhead SS-18 ICBMs. "This would not reduce the threat—and would, in fact, increase the threat—to a radically reduced U.S. land-based retaliatory force."

In sum, Mr. Nitze said, acceptance of the Soviet plan as presented "would result in U.S. inferiority in strategic nuclear weapons, U.S. inferiority in nuclear capabilities in Europe, and a reduction in the U.S. contribution to the conventional defense of its allies and its own interests worldwide."

The other major podium presentations on the Annual Meeting program are summarized below. In addition, these Defense and Army officials addressed more specialized audiences: Deputy Secretary of Defense William H. Taft IV at the sustaining members' luncheon; Gen. Maxwell R. Thurman, vice chief of staff of the Army, at a dinner for AUSA chapter presidents; the commander in chief of the U.S. Readiness Command, Gen. Fred K. Mahaffey, at a luncheon for ROTC cadets; and Gen. Robert W. Sennewald, commanding general of Army Forces Command, at the corporate members' luncheon.

Maj. Gen. John P. Prillaman, deputy chief of staff for ROTC matters at the headquarters of the Army's Training and Doctrine Command, led the discussions at an ROTC workshop, while SMA Glen E. Morrell, sergeant major of the Army, hosted a sergeants major conference and luncheon.



Officers of the Infantry School, Ft. Benning, Ga., try out a display of integrated helicopter cockpit technology.

Prospect of Zero Growth

Marsh: Budgetary Cutbacks Threat to Security Effort

Expressing his concern over the trend toward reduced defense budgets after years of notable growth, Secretary of the Army John O. Marsh Jr. reminded the opening session audience at the Annual Meeting that "as a rising tide raises



John O. Marsh Jr.

all ships, so does a falling tide lower all ships."

Mr. Marsh noted that, in the fiscal 1985 five-year defense plan (projecting spending through fiscal 1990), the Army has "had to take reductions of $52 billion." "You cannot take these kinds of cuts," he said, "without adverse impacts in programs vital to our national security efforts."

Mr. Marsh indicated the budgetary cutbacks will be particularly felt in the area of modernization, where the Army has made great strides in the past several years with such improved weaponry as the M1 Abrams tank, the Bradley infantry fighting vehicle and the new howitzers. Citing specific examples publicly noted by Deputy Secretary of Defense William H. Taft IV, Mr. Marsh said, "Modernization of our land forces—Army and Marines—has been reduced and delayed," with "20 percent fewer Bradley fighting vehicles" and "reductions in helicopter antitank missile procurement of almost 20 percent."

While the U.S. defense program is faced with the prospect of zero growth, Mr. Marsh noted, "There is no zero growth restriction on the Soviet Army. On the contrary, their buildup has been steady and their mobilization program constantly growing." He added that "this acceleration has occurred for a period of many years" and "there are no signs of a slowdown."

Reminding his audience through a succession of examples that "we live in a troubled world," Mr. Marsh called for a rededication of effort by those in the Army. "It is easy to become disillusioned but you must keep your vision," he said. "It is easy to become dissatisfied, but you must renew your spirit. It is easy to become a cynic, but you must retain your sense of purpose."

In support of this theme, Mr. Marsh referred to the attributes of three of the nation's great leaders: From President Ulysses S. Grant, the example of perseverence; from President Abraham Lincoln, compassion in adversity; and from President George Washington, a strong sense of purpose and national will.

Citing the Army's more than 200 years of service to the nation, Mr. Marsh concluded by saying, "When we were needed, we were there."

Light Divisions Increased

Wickham: Need for Balance In Force Structure Vital

Army Chief of Staff Gen. John A. Wickham Jr. touched on a number of important issues affecting the service as he addressed a full-house audience of more than 2,600 at the Annual Luncheon.

While praising the quality of the Army's soldiers, equipment, training and readiness initiatives—including the development of the new light divisions, Gen. Wickham noted on the negative side an "erosion of support for a strong national defense" and "hyped criticism [of the military] by the media, Congress and other groups."

In terms of quality, Gen. Wickham described today's troops as "24-carat-gold soldiers." As proof of this, the chief of staff cited statistics showing "high school diploma graduates [in the active component] continue to enlist at a rate of 91 percent" while "rates of indiscipline remain at historical lows." Gen. Wickham pledged continued support of family programs for these soldiers based on the proposition that "the stronger the family, the more ready the Army."

The fielding of modernized equipment s taking place in both active and reserve components units under the philosophy hat "the first to fight is the first to be equipped." The chief of staff noted that Army National Guard and Army Reserve orces have received some $2.3 billion of nodernized equipment in the last two ears and are slated to receive another 3 billion's worth during the next two ears. He mentioned two areas where hortfalls exist: the Army's chemical warare capability and air defense for its eavy forces following the decision to bandon the DIVAD (division air defense un) program.

"The training tempo has increased sigificantly," said Gen. Wickham. The use f training simulators, activity at the Naonal Training Center and joint and comined exercises have all been expanded as ave the number of battalion training ays and flying hours. Overseas deployents are up and the reserve components re participating to a greater extent. "War aming and simulations are helping to nprove our understanding of the operaonal level of warfare," noted Gen. Wickam.

The chief of staff emphasized the imortance of "jointness" regarding deployility. "When we go to war, we'll go in someone else's aircraft and someone else's ships," he said. "In battle, we'll use someone else's aircraft for deep reconnaissance, interdiction and close air support." Referring to last year's memorandum of agreement between himself and Air Force Chief of Staff Gen. Charles A. Gabriel, Gen. Wickham said it "has strengthened coordination of program and budget priorities, improved war-fighting capabilities and will lead to cost avoidance of hundreds of millions of dollars."



Army Chief of Staff Gen. John A. Wickham Jr. (second from left) presents the Walter T. Kerwin Readiness Award for Army Reserve units to Lt. Col. John W. Smith, who accepted for the unit he commands, the 3398th Reception Station, Greenville, S.C. Looking on are AUSA President Joseph F. Caligiuri (right) and Gen. Walter T. Kerwin, USA, Ret., former commanding general of Forces Command, for whom the award is named.

The Army has improved its sustainability posture through a substantial increase in prepositioned stocks in both Europe and South Korea. Prepositioning of war reserves will continue to grow, especially in the area of high technology munitions, but the rate will slacken in the future due to budget reductions, according to Gen. Wickham.

Balancing the force structure "is the single most important way we can make the Army more relevant to the times," said the chief of staff. While the heavy units continue to be "the cornerstone of our deterrent forces in central Europe," the development of light forces enables the Army to respond to "the entire spectrum of potential threats." Noting the progress being made in converting several divisions to the light infantry pattern, Gen. Wickham added that efforts are under way to provide lighter equipment and greater fighting ability to those forces. The light divisions are able to deploy three times as fast as the standard infantry division, he noted.

Special operations elements provide a third capability within the Army's force structure. "They enable us to combat terrorism and unconventional warfare at the low end of the spectrum," said Gen. Wickham, "and they complement our conventional capabilities at the high end."

Significantly, while the Army's overall end strength has remained constant at about 781,000 troops, refinements in the force structure have enabled the service to increase the number of combat battalions by more than 15 percent.

After reviewing what he described as the "good news," Gen. Wickham said, "there is also some bad news." A major concern of his was the "declining trend in defense dollars before we have finished rebuilding our defense after a decade of neglect."

The chief of staff indicated that the Army foresees zero real growth in the fiscal 1986 defense budget and three percent in fiscal 1987 and 1988 at best. "The Army has been forced to reduce almost $90 billion from its plan over a five-year period," noted Gen. Wickham.

These cuts come at a time when the Army has only 30 percent of its needed Bradley fighting vehicles and Black Hawk transport helicopters and about half of its Abrams tanks and Apache attack heli-

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copters, according to Gen. Wickham.


Gen. Wickham

He also expressed concern over what he sees as "the growing effect to make the military the whipping boy." Gen. Wickham referred particularly to criticism of the Defense Department for its "inefficiencies, waste and lack of jointness."

While acknowledging that the military does make its share of mistakes, Gen. Wickham said it is not as bad as the negative reviews would indicate. "My concern is that hyped criticism of our defense effort and systems will lead to disinterest in service by the quality enlistees we vitally need . . . [and it] may undermine rather than strengthen our defenses," he said.

In response to those who criticize the way in which the military is run, Gen. Wickham said, "There are many programs in being, and initiatives under way, that improve competition, the acquisition process and the management of information and resources."

Addressing the issue of jointness, he mentioned the successful capture of the terrorists who murdered Leon Klinghoffer as "a good case pointing out the effectiveness of the joint operational system."

Gen. Wickham said he favors "changes that would reform the relationship between Congress and our military system . . . that allow the Pentagon to plan ahead with certainty and free Congress to examine the broader issues of policy." He also recommended less micro-managing by congressional subcommittees, greater use of multiyear procurement and institution of a two-year budgeting process.

"The bottom line is that we must guard against complacency," said Gen. Wickham. "We must maintain the momentum of the Army's modernization programs."

The chief of staff also discussed ways in which this year's theme of leadership is being applied to make the Army stronger. "The theme . . . has focused our attention on professional competence, caring and mentoring," said Gen. Wickham. Analysis of the professional development systems for the Army's officers, warrant officers, noncommissioned officers and civilians has led to changes in programs and practices which have improved leadership up and down the line. "The process," noted Gen. Wickham, "has been 'spirit-intensive,' not 'resource-intensive, and it's been a qualitative, not a quantitative, endeavor."

The chief of staff concluded his remarks with a tribute to Lt. Col. Arthur Nicholson, who was killed last spring by a Soviet sentry while on duty in East Germany.

"Nick Nicholson's memory provides a graphic reminder to all naysayers about the promise of our young leaders in today's Army," said Gen. Wickham. "He was a young American hero, a standard bearer."

Karen Nicholson, the wife of Col. Nicholson, was on hand for the Annual Luncheon and was also paid a tribute by Gen. Wickham. The standing ovation which she received when she stood to be recognized provided a moving conclusion to the words of the chief of staff.

Defense of NATO Crucial

Rogers: Flexible Response Sound Deterrent Strategy

Gen. Bernard W. Rogers, the supreme allied commander, Europe (SACEUR), told an Annual Meeting audience that the NATO alliance has little choice but to do the expensive and politically unrewarding work of improving conventional forces in support of the "flexible response" doctrine, despite the surface attraction of novel alternative strategies for the defense of western Europe.

Those who doubt "whether . . . NATO's deterrent strategy of flexible response remains sound," Gen. Rogers said, tend to forget that the alliance faces "a subtler, more ominous threat" than overt Warsaw Pact aggression: "The major menace we face is that the Soviets will continue to widen, manipulate and exploit" the gap between NATO and Warsaw Pact capabilities "until the military situation —even for a defensive alliance—gets beyond restoration. Then, the Soviets will be able to achieve their objective in western Europe: to intimidate, coerce and blackmail without having to fire a shot."

Only the current doctrine, Gen. Rogers added, takes into account the appearances of deterrence and the reality of fighting capability at all levels of conflict. He went on to describe and criticize some of the major proposals to revise NATO's basic strategy:

■ *Renunciation of the first use of nuclear weapons.* "Our primary goal in NATO is to deter all war, not just nuclear war. A 'no-first-use' doctrine would make it appear that NATO would rather accept a conventional defeat than resort to nuclear weapons." Also, the success of a conventional defense will always remain in doubt because the Warsaw Pact can "choose the time, place and weight of an attack."

■ *Reliance on the threat of a NATO strategic counteroffensive.* "Even if such a concept were politically acceptable—which it is not" (the alliance objective is to end conflict on favorable terms with its territories intact)—the forces required to mount a counterinvasion of eastern Europe while simultaneously defending NATO borders and rear areas would far exceed those needed for the current strategy.

■ *Territorial defense.* Reliance on "a militia armed solely with antitank and antiair weapons would leave the West vulnerable to blackmail by the threat of overwhelming conventional force." The strategy could not even be activated until NATO territory had been occupied, and "once in possession of NATO territory, it is unlikely that the Soviets could be compelled to leave" by passive forces with little offensive potential.


Gen. Rogers

Gen. Rogers noted that SHAPE (Supreme Headquarters, Allied Powers, Europe) itself has been accused of seeking radical changes in alliance strategy, particularly in the application of advanced technology to follow-on forces attack (FOFA). But "we do not, as some critics charge, seek to elevate technology to the level of a panacea for all of our conventional force ills."

Rather, "through FOFA, we are seeking means—in addition to manned aircraft—to attack with conventional weapons lucrative targets from just beyond the line of contact to as far into the Warsaw Pact rear as our surveillance and weapons systems permit," to reduce the strength of the forces that must be faced at the borders.

But such innovations, even if successful, cannot substitute for what Gen. Rogers described as the core of NATO deterrence: "the capability to man, equip, maintain, sustain and reinforce the conventional forces of our nations beyond the first few days of any potential conflict."

But, he added, "NATO has been spending more on conventional forces than the Warsaw Pact and producing less," despite having 2½ times the gross national product of the Warsaw Pact nations and 50 percent greater population. Lack of coordination and "nonproductive competition within the alliance" limits the potential of NATO's superior industrial and technological base, he said. "If we on both sides of the Atlantic are not to unilaterally disarm ourselves because we will not be able to afford modern weapons," he added, "then we must stop dissipating our efforts as we are now doing."

NATO's lack of a credible offensive chemical warfare capability, Gen. Rogers said, is a related problem that "makes Soviet use of chemicals a rational—one might say a tempting—early option for them," should war break out. Quite apart from the panic and casualties that a chemical attack would cause, he explained, even limited use would force NATO troops into cumbersome protective gear, "thereby reducing our combat effectiveness by as much as 50 percent" while "the Warsaw Pact forces could continue to operate relatively unencumbered."

"We simply must face some important facts about chemical weapons," he said: "Our current stockpiles are obsolescent, unsafe to handle and largely useless for military purposes." In light of this, "the extensive Soviet stockpile of offensive chemical weapons, their vast array of delivery means and demonstrated inclination to use chemicals—both in training and in support of actual combat operations—are particularly ominous."

Gen. Rogers, a former Army chief of staff (1976-79), discussed a number of Army programs that address gaps in NATO's deterrent posture and help meet the U.S. "commitment of ten divisions in Europe within ten days of the start of mobilization."

The SACEUR was skeptical that the Army can carry out all of its current programs, given "the scaling back in future defense budgets that is upon us," unless there is "a more equitable sharing of the budget pie, to the advantage of the Army." Otherwise, "the Army, in my judgment, will find it very difficult, if not impossible, to raise readiness and sustainability to adequate levels, to modernize and, at the same time, increase its division force structure."

"If additional divisions are required by this nation's security plans," he added, the Army needs greater authorized strength, as well as a bigger share of the defense budget. "Otherwise, we run the risk of finding ourselves in possession of an Army larger in numbers of divisions, but reduced in combat capability and staying power."

Gen. Rogers made these comments about other Army programs:

■ *Prepositioned equipment.* The United States has promised NATO six divisions' worth of POMCUS (prepositioning of materiel configured to unit sets); "to date only half of the total planned . . . tonnage has been placed in European storage sites, but it increases each year."

■ *Strategic mobility.* The Navy and Air Force have made great progress in providing the additional fast sealift and airlift needed for NATO reinforcement. But, "historically, in times of budget cutbacks, strategic lift has been an early casualty, which means the Army must continue to be a forceful advocate for it and be alert to the budget cutter's knife."

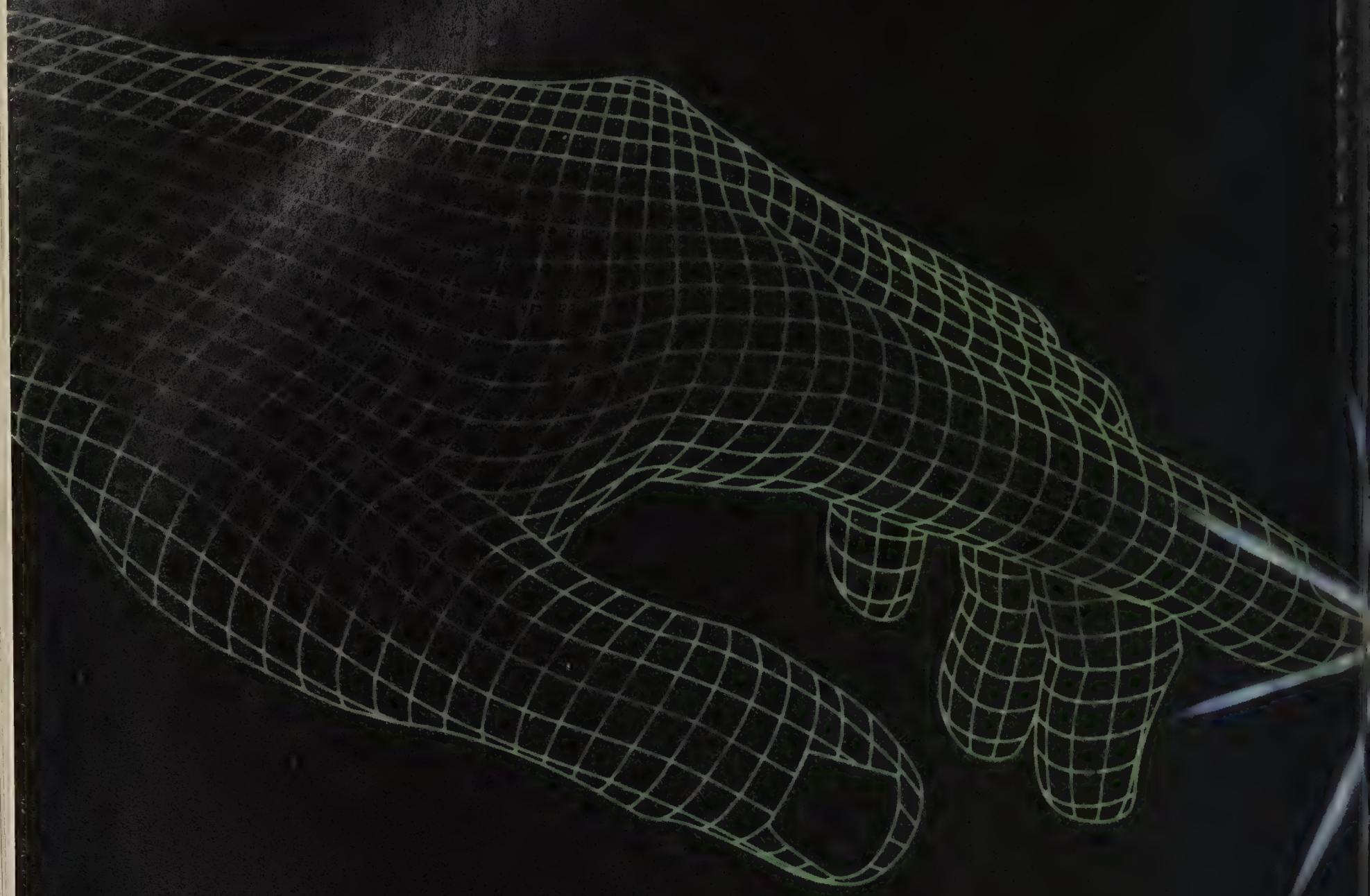
■ *Inadequate combat service support (CSS).* "Today, the Army's CSS structure in [the U.S. European Command] is inadequate to support even the combat forces permanently forward deployed in Europe," let alone the reinforcements programmed for the first ten days of mobilization. Only 56 percent of the CSS units required for the deployed force are now in the theater and they are "generally understrength—some as much as 70 percent."

Further, many of the reserve components units that would support the early NATO reinforcements are "understrength and underequipped" and "will miss their deployment dates as they remain in the continental United States awaiting delivery of essential equipment." Overall, Gen. Rogers said in a question-and-answer session following his address, the European theater is short 28,000 CSS troops for the current force, and 95,000 if the early reinforcements are taken into account.



The U.S. Army Band (Pershing's Own) tunes up for the opening ceremonies of the Association's Annual Meeting.

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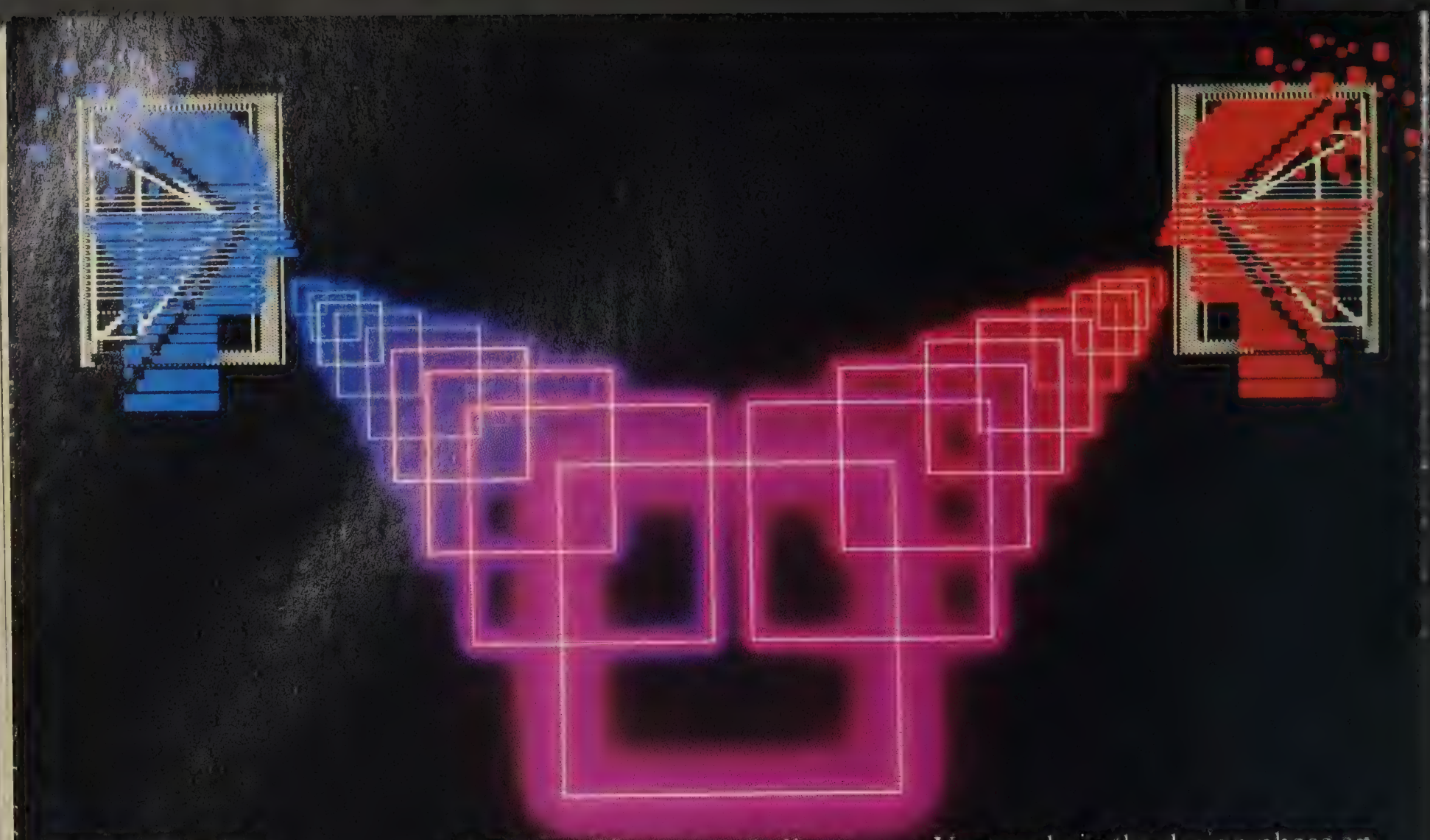
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Lt. Col. Randy J. Ence (second from left), commanding officer of the Utah National Guard's 2nd Battalion, 222nd Field Artillery, accepts the Walter T. Kerwin Readiness Award for his unit from Army Chief of Staff Gen. John A. Wickham Jr. (center) and Gen. Walter T. Kerwin, USA, Ret. (second from right), the former commanding general of Forces Command for whom the annual award is named. Witnessing the ceremony are SGM Duane L. Wison (left), the sergeant major of the honored unit, and AUSA President Joseph F. Caligiuri (right).

■ *Inadequate war reserve stocks.* There are some "war-stopper" shortages in NATO stockpiles of ammunition and other consumable items of supply, including "air-to-air missiles and certain artillery munitions." Also, "the stockage levels of some major end items of Army equipment, spare parts and reserve kits for the Air Force are too low."

At the current rate of procurement, the Army "may never attain the support posture of modern munitions deemed necessary for forces at the far end of the line of communications. It is much more important . . . to have the Army provide the tenth day of supply of a 'war stopper' than providing, say, another one or two days of high-explosive ammo, whose stocks in Europe are already double the NATO objective."

■ *Uncertain manpower reserves.* Reviving the draft solely to fill up the Army's Individual Ready Reserve (IRR) might be considered, because "today the . . . IRR is not capable of supplying an adequate number of trained combat replacement personnel" in the interim before general conscription could have any effect.

If this seems like a long and expensive list of further U.S. contributions to the defense of NATO, Gen. Rogers noted that the efforts already being made by the other alliance members are often unrecognized, let alone fully credited. Even 30 days after any mobilization, he added, "Europe would still be providing 75 percent of the ground forces, 50 percent of the air and 30 percent of the naval forces" (the peacetime proportions are much higher).

"To field these forces," he said, "many European nations rely on conscription, a social and human cost which does not show up in standard burden-sharing statistics." The European members also provide land for about 900 U.S. bases, while West Germany alone has 400,000 foreign troops quartered on it and must suffer the inconvenience of about 5,000 military exercises each year.

Also, while "it is true that the increase in U.S. defense budgets since 1980 until now has been exemplary . . . in some senses the United States is making up for years of neglect." If the whole period 1971-83 is taken into account, Gen. Rogers said, "The United States increased its defense spending overall by six percent in real terms, while the allies realized a 27 percent real increase."

But even if the division of labor between the allies were less equal than it actually is, "America's contribution to the defense of the West in Europe is not an act of charity" but stems "from a clear awareness of U.S. self-interest."

Despite increased strategic interest in other parts of the world, Gen. Rogers said, the nation must "ensure consistent support for all U.S. vital interests" and "give priority to the area of the world which could ultimately lead to the greatest threat to our homeland."

"Our forces defend vital U.S. interests in Europe which would need to be defended regardless of the efforts of our allies. To make that presence conditional on Europe paying more for one program or another is to make a threat which—if carried out in a fit of pique—would be destructive to our own interests.

"For the United States to withdraw its forces from western Europe would be disastrous. It would be counter to the vital interests of the United States, would unravel the alliance and would move the Soviets more rapidly toward achieving their objective to coerce and intimidate western Europe."

Social, Economic Factors Key

Galvin: U.S. Must Support Latin American Stability

Although U.S. military activity in Latin America is "an economy-of-force effort," it is still of critical importance to national security "even at the least cost to ourselves," said the new commander in chief of the U.S. Southern Command, Gen. John R. Galvin, in an Annual Meeting address.

"Without a secure southern flank," Gen. Galvin said, "we cannot project power to Europe or Asia—it is as simple as that."

Gen. Galvin, a Spanish linguist, returned to the Latin American scene in February after a 27-year absence; as a young officer, he served in the old 65th Infantry in Puerto Rico and as a Ranger advisor to the Colombian Army during 1956-58 when that nation was battling the "M-19" guerrilla movement.

He said he found that much had changed, not least the scale of the U.S. military effort and the fact that there is now "very little military-to-military contact." Congress has limited the size of U.S. military assistance groups in the region to no more than six officers each, he noted, so there are only 86 officers permanently assigned in Latin America, compared to about 750 in the 1950s.

"You just can't find many people who went to the School of the Americas, or who could tell you, 'I went to flight school in Texas,' " he said. "There are 150 officers in Peru, but they are Russians," Gen. Galvin noted, adding that, "in Peru, you hear it said that the generals speak English, but the young captains who want to get ahead speak Russian."

Gen. Galvin said the modern Latin American insurgencies are far more intense



Gen. Galvin

and tenacious than the ones he knew firsthand in the 1950s: "There was a certain amount of instability, but the revolutions just smouldered along and eventually they were defeated—a lot of that has changed." Since then, he noted Cuba has trained about 10,000 revolutionary operatives, "and that is one big destabilizing force."

Cuban President Fidel Castro, Gen. Galvin said, has given the modern guerrilla movements "a sense of mission and goals," and they have resources that were not available in the 1950s, such as "tie-ins with drug-smuggling organizations—and it is definitely there," and more abundant supplies of arms from the Soviet bloc nations. "There are fishing trawlers down there that carry more antennas than my headquarters," he said, and East Bloc merchant shipping is now common in Latin American ports where it used to account for a very small percentage of the activity.

Given the pressures, "mainly economic," Gen. Galvin said, the nations of the region have shown "tremendous strength" to maintain some degree of political and social stability. Of the 19 nations in Southern Command's purview, Gen. Galvin said, 14 are political democracies, some of these having been turned back to civilian government in recent years.

Of the nations in the region, according to Gen. Galvin, eight are embattled by active insurgencies: Chile, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Peru and El Salvador. He discussed the situations in four of these nations in more detail:

■ "The military in Colombia, little by little, is being overwhelmed" by the revived M-19 movement, whose "insurgency . . . has grown back to levels greater than in the 1950s." One problem among many, he said, is that the weak central government has an inefficient revenue base and "they lack the money for the combat power" required to defeat a developed guerrilla movement.

■ Recent developments in El Salvador are encouraging, but "it will be a long time before we can say it is over" there. "Latin America and the rest of the world," he added, "will be watching very carefully what we do in El Salvador," and the insurgents are still operating on the assumption that the United States will tire of the struggle.

"We have to be careful that the shooting war does not attract all of our attention," he said, referring to El Salvador and other beleaguered nations, where "the nonshooting war is growing in terms of the development of the insurgent infrastructure."

■ "There is a growing subversive threat to Honduras," with attempts to infiltrate groups of up to 90 revolutionary agents at a time from neighboring Nicaragua. Also, there have been 34 attacks over the Nicaraguan border this year, with "significant penetrations of 15 to 20 kilometers in depth."

■ In Costa Rica, which has a national police force but no armed forces as such, there have been ten incursions over the Nicaraguan border; the most recent, a major one on 31 May. The United States has helped train 300 border guards for Costa Rica, but this is a skimpy force for 300 kilometers of border. Also, according to Gen. Galvin, there is a Costa Rican "brigade" of 400 to 500 men fighting with the insurgents in El Salvador, potentially the core of a domestic revolutionary movement.

With respect to Nicaragua, Gen. Galvin said the Sandinista movement there was conceived "as a revolution without borders, and they have continued that aggression to this day." At the outset, he added, the Nicaraguan government spurned an offer of $118 million in U.S. economic aid which, at the time, was more than the total amount of aid going to the rest of Latin America. Since then, Gen. Galvin added, the Soviet Union has provided more aid to Cuba and Nicaragua than the United States has provided in the whole region.

Gen. Galvin characterized U.S. demands of Nicaragua in this fashion: "Stop the aggression"; encourage "pluralism" in political life; "get rid of the Cubans"; and "bring your army down to a size compatible with your neighbors."

Of the anti-Sandinista insurgency in Nicaragua that has received on-again, off-again U.S. aid, Gen. Galvin said that it now numbers 17,000 combatants, "twice the number of a year ago, during a period when they were not being officially supported by the United States."

Of the region in general, Gen. Galvin said that developments are critical, because "to the extent that these governments are weak, we are weak." But the United States also has new opportunities, he added, since Soviet activity represents



The Fife and Drum Corps of the 3rd Infantry (The Old Guard) provided the pageantry for the opening ceremonies.

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a new source of foreign intervention in Latin American affairs and "for the first time, we are wearing the 'white hats' in the area."

In order to exploit any such advantage, he said, U.S. policy must find ways to ensure social and economic stability before active insurgency begins and "you have an infrastructure built up over a long period of time."

"When you get to the point where insurgents are pulling triggers, it will take a very long time, indeed" to restore the situation.

JCS Reform Not Needed

Vessey: Defense Funds Used For Service-Wide Upgrades

Gen. John W. Vessey Jr., only two weeks retired from the office of chairman, Joint Chiefs of Staff (JCS), told an Annual Meeting audience that the effectiveness of the nation's military command structure could be only marginally improved by JCS reform and that "we can accomplish a lot more by doing the jobs we already have in front of us."

The Senate Armed Services Committee staff study report *Defense Organization: The Need for Change* was released on the day Gen. Vessey delivered his address, and he noted from the newspaper accounts of its conclusions, "I see terms like 'broke, got to be fixed,' 'dangerously cumbersome' and 'must be streamlined.' "



Gen. Vessey

"The critics will tell you it is the JCS that has screwed this thing up by not being properly organized," he said, with interservice "bickering" being one of the results. In hundreds of JCS meetings, Gen. Vessey said, "I have never heard the JCS 'bicker.' You have four service chiefs who know what it takes and that the services must cooperate. The basic thing is for these chiefs to get in there and do their jobs, rather than fiddle around with the organizational charts."

Gen. Vessey also had some specific answers for congressional critics who claim that the rhetorical "one trillion dollars" the Administration has "poured" into defense has yielded little in the way of additional military capability. To have avoided spending about 73 percent of that amount would have required the complete abolition of the armed forces as they existed at the beginning of 1981, for as Gen. Vessey noted, the "baseline defense program would have cost about $800 billion," taking into account nothing more than inflation during that period.

What is really open for discussion, he noted, was how wisely the services have spent the extra $310 billion, the five-year total appropriated actually being about $1.1 trillion. Gen. Vessey summarized the results this way:

■ *$80 billion for manpower and related programs.* "Where were we in 1979? We were 16,000 short of authorized strength [in the Army], we had only about 50 percent high school graduates in the force, we thought we were recruiting about 20 percent 'Cat IVs' [the lowest mental category in armed forces testing], but it turned out to be closer to 45 percent [because of improperly calibrated testing]. When I came back to Washington from Korea [in 1979], I'll tell you, the outlook was bleak." All of those conditions have long since been reversed, he added, the shortages made good, so that "people have become the fundamental building block for the armed forces."

■ *$110 billion for weapons and equipment.* At the turn of the decade, "the modernization program was limping along on 1½ cylinders." Since then, about 5,000 new fighting vehicles have been purchased for the Army, 4,000 modern aircraft for all the services and "the Navy has gone from 479 ships to 523 while retiring 63 older vessels."

But it is the quality of the weapons that makes the difference, Gen. Vessey suggested, not just the numbers. "Part of the debate was whether we would catch up to the Russians in numbers," when, "from the outset, we had no idea of doing that. The same people [in Congress] vote to deny modest force structure changes because we are not catching up with the Russians."

The newer equipment has capabilities that must qualify any discussion of quantities. As an example, "700 of the 1,200 new Air Force fighters are F–16s, which have 2 to 2½ times the sortie rate of the F–4s they replaced, and greater accuracy with 'dumb' iron bombs than the F–4 has with 'smart' bombs—that is a tremendous increase in the capability of that force."

■ *$70 billion for additional readiness support,* including war reserve stocks of ammunition, spare parts and other consumable items.

■ *$39 billion for more and improved training.* "The leverage from that has been tremendous."

All in all, Gen. Vessey said, "I think this is one of the most exciting times to be in the service. There is more going on in modernization, doctrine, people, training and the development of sound tactical concepts than ever before, and that is important for you people who will be carrying on in the services in the future."



Larger items among the industrial displays were shown in the outdoor areas where 26 companies mounted exhibits.

AUSA Delegates Approve 16 Resolutions

Preamble. Today, the United States is faced with an increasing Soviet conventional capability. Spreading international terrorism and regional conflicts also pose foreign policy problems that could lead to military confrontation.

As nuclear conflict remains the least likely of military options, America's interests throughout the world will continue to be subjected to constant threat and stress by lower level conflict and terrorism. The stronger our conventional military forces, the more they will be perceived as a credible deterrent and, thus, make a major contribution to lowering the likelihood of nuclear conflict.

The manning, training, equipping and sustaining of modern and mobile conventional Landpower forces is of the highest national urgency. Equipment modernization and provisions for sustainment must proceed without delay along with continuing efforts to capitalize on each service's inherent strengths and capabilities. Increases in combat effectiveness through eliminating duplicative programs and filling voids in service capabilities through the initiatives of the Joint Force Development Process provide the maximum capability to execute AirLand Battle operations.

It is imprudent to transfer active Army missions to the reserve components without carefully matching capabilities and resources. Accordingly, Total Army strength must be increased to accommodate critical force structure changes. The nation's defense resources must be allocated to our most current urgent needs—conventional force manning and modernization. This requires that the Army be given a more equitable share of the defense budget.

The ultimate success of the Army in any conflict depends on the quality of its most important ingredient—people. To ensure that the Army continues to attract high quality personnel, the government must provide for stable, reasonable and comparable pay compensation and adequate family support programs. Service members are entitled to stability in their entitlements and benefits.

In the following resolutions, the Association of the U.S. Army reaffirms its conviction that a strong and combat-ready Landpower force is the best deterrent to the most likely threats to an orderly world and will continue to be the decisive factor in our national defense. Further, this Association reaffirms its pledge to support the needs of the men and women who serve in the Army and the well-being of their families.

* * *

Realistic Army Budget. This past year most federal budget considerations have been dominated by controversy over the federal deficit.

Budget decisions have had and will continue to have an adverse impact on the Army's resources required to meet its Landpower missions. A more equitable distribution of defense funding is necessary.

The Army's share of the total defense budget has not kept pace with resource needs to meet Landpower missions and contingencies. It declined a full half of one percent in fiscal 1985 and will decline again in fiscal 1986. In terms of real growth, the Army requested an increase of 5.6 percent for 1986 but received none. As the Army has the largest percentage of its budget devoted to fixed costs for personnel, budget decrements impact most severely on modernization and readiness.

Landpower missions cannot be accomplished without the support of the other services. The Joint Force Development Process was initiated in 1984 through a memorandum of agreement by the Army and Air Force chiefs of staff. This process stems from the recognition that the services never have enough resources to accomplish everything they would like to do. Such cooperation among the services is intended to derive the maximum combat capability out of every dollar spent.

Beyond the basic elements of manning, training and equipping, the Total Army must be given sufficient funds to provide a force which is balanced, flexible, strategically deployable, sustainable and technologically advanced.

We therefore resolve to urge the Administration and Congress to:

- Approve a defense budget that provides the Army an increased share to fund assigned missions with additional near term funding for Total Army modernization, equipment fill, construction of support facilities and quality-of-life programs.
- Continue a national commitment to support overall defense needs as demonstrated in the ongoing Joint Force Development Process.

Balanced Landpower Forces. To meet commitments within resource constraints, the Army's leaders have chosen to maintain current active strength, modernize equipment, transfer missions to the reserve components and increase reserve strength. To assure the required level of reserve components readiness, the Army program to increase full-time manning of these units is essential.

Strategically deployable balanced land forces are essential to support national strategic objectives, raise the nuclear threshold, counter Soviet landpower and prevent escalation of crises and low-intensity conflicts. Light forces with greater flexibility and mobility are required to deter and respond to mid- to low-intensity crises. Regionally oriented Special Operations Forces must also be included in the balanced force structure of modern and rapidly deployable forces. The Army's ability to achieve this required force balance on a timely basis is currently constrained by resources.

A close look at the world economic and political realities clearly indicates that commitments will continue to expand. If such commitments are to be credible, both to our allies and to our potential foes, Landpower must be fully resourced. A more modern Army with the manning to meet mission requirements is essential.

We therefore resolve to urge the Administration and Congress to:

- Support a force structure of 18 active Army divisions, ten National Guard divisions and vital support elements to meet the growing national security requirements for Landpower forces.
- Continue to fund the modernization program for the heavy Landpower forces.
- Continue to fund the program to establish five light infantry divisions.
- Continue to fund the program to improve the capability of the Special Operations Forces.
- Consistent with maintaining a quality force and continuing equipment modernization, support, as a goal, increased end strengths of at least 860,000 for the active Army; 492,000 for the National Guard; 345,000 for the USAR Selected Reserve; and the equivalent of 405,000 Department of the Army civilian authorized spaces.

Selective Service. Demographic projections indicate a dwindling national manpower pool. Should there be a future mobilization, the Army will face a severe shortage of manpower needed to fill units of the active and reserve components to authorized strength and to replace initial combat losses.

Mobilization requires the earliest possible induction of personnel. Peacetime registration, an essential element of rapid induction, enhances preparedness by providing a functioning, tested mechanism to produce required manpower. Any time that can be saved is critical.

The act of registration is a minimum expression of the obligation of citizenship. The few individuals who refuse to comply should forfeit their right to the financial benefits provided by the people of this nation.

Also, organizations, institutions and others who encourage young men to disobey the legal requirements to register should not receive federal financial support or special tax status.

For recruiters, the availability of Selective Service registration lists are a valuable source of prospective recruitments.

We therefore resolve to urge the Administration and Congress to:

- Continue the Selective Service System registration process as currently enacted.
- Continue to support legislation enacted to deny federally funded employment and oth-

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Members of the Association's 1985 resolutions committee worked through many drafts before the document was ready for consideration by delegates to the Annual Meeting.



er federal benefits to those unlawfully failing to register.

■ Enact legislation to withhold federal funds, including special tax status to institutions or organizations who encourage young men to disobey the legal requirement to register.

We further resolve to encourage the Selective Service System to make lists of registrants available to recruiters.

DA Civilian Work Force. With a ceiling on active component military strength, civilian contributions take on added significance. In past years, the quality and quantity of the civilian work force has suffered from directed reductions, hiring limitations, senior level pay caps and failure to provide pay comparability.

The Army now has the flexibility to match civilian personnel resources with mission requirements. Accordingly, it is important that no arbitrary actions be directed that would adversely affect the beneficial results of recent congressional actions.

Resources to pay the civilian work force must accompany these recent changes. The problems which remain require positive actions to enable the Army to compete successfully in recruiting and retaining qualified civil service personnel. These problems include:

■ Pay caps and failure to provide pay comparable to the private sector, which adversely affects recruiting and retention of highly trained scientific, technical and managerial civilian employees.

■ Continued reluctance to authorize payment of Senior Executive Service bonuses in accordance with the provisions of the Civil Service Reform Act of 1978.

■ Requiring new employees hired after 1 January, 1984, to contribute to both Social Security and Civil Service retirement.

■ Requiring civilian employees serving overseas to pay an initial user fee when they or their families use military medical facilities.

■ Discrepancies between overseas and domestic civil service programs.

■ Lack of home leave or not being granted career status after three years of satisfactory service.

■ Inequitable automobile transportation benefits.

We therefore resolve to urge Congress and the Administration to:

■ Remove executive pay level restrictions.

■ Authorize payment of Senior Executive Service bonuses in accordance with the Civil Service Reform Act of 1978.

■ Develop a revised retirement system for new employees that is fair and equitable to all employees and protects prior entitlements.

■ Establish a professional incentives program for engineers, scientists and other technically skilled specialists.

■ Refrain from imposing across-the-board DA senior civilian personnel cuts.

■ Eliminate user fees at military medical facilities for civilian employees and their families serving overseas.

■ Remove the restriction on the return shipment of automobiles from overseas.

■ Restore cost-of-living comparability for federal employees.

■ Mandate the removal of discriminatory hiring practices and career status restrictions for new hire civilian employees and working family members in overseas areas.

Modernization—Research, Development and Acquisition. Modernization of military equipment and systems for the Total Army, a primary objective, is essential to Landpower effectiveness. Fiscal constraints over past years have presented obstacles to the Total Army modernization programs, impacting on readiness.

Army Landpower forces employing AirLand Battle doctrine, empowered by superior technology, provide the key element of conventional deterrence to the Soviet threat. The Army must accelerate fielding modern close battle systems and rapidly field a deep battle capability to provide Army forces the ability to operate as envisioned by this doctrine.

Recent acquisition of close battle systems has resulted in progress being made to reverse the neglect of the last decade; however, budgets have not been sufficient to provide resources needed to accomplish timely essential modernization.

Fiscal 1987 is a turning point and provides the opportunity to procure increased quantities of close battle systems and exploit available technology to accelerate fielding of deep battle systems at an additional cost of approximately one percent of defense investment. An appropriate share of those funds must be devoted to concurrent development of integrated logistical support systems.

Current Army emphasis is focused on conventional Landpower forces needed for the AirLand Battle doctrine. Additionally, for nearly 30 years, the Army has been developing and pushing "state-of-the-art" ballistic missile technology, including directed-energy beam-weapon technology, required to counter strategic ballistic missiles.

The successful nonnuclear intercept of an unarmed reentry vehicle target in June 1984 was a major Army contribution to demonstrate strategic defense initiatives (SDI) progress. Such relatively mature technologies could provide initial defensive options against the Soviet threat expected to be deployed at least into the next century. While the SDI program focuses on the nuclear strategic ballistic missile threat, the advance technologies developed will likely have application to future modernization of conventional forces.

The Army's research, development, test and evaluation account, the smallest among the military departments, has had no real growth in recent years and was in fact slightly negative in fiscal 1985. Adequate levels of funding must be provided to permit the Army to exploit high leverage technologies that can allow the Army to make substantial progress in its ability to execute AirLand Battle doctrine.

There continues to be a serious shortfall in the Army's air defense capability and modernization effort. Funds are needed on an urgent basis to develop a modern forward area air defense system to protect close combat forces from attack helicopters and fixed wing strike aircraft.

The nation's security depends on availability of critically scarce strategic materials that may be inaccessible in an emergency. The research and development effort must also include development of alternate materials and manufacturing processes.

We therefore resolve to urge the Administration and Congress to support a modernization program which requires:

■ Increased funding for accelerated acquisition of items in production, including conventional ammunition and spares, for deployed units and for further distribution on a "first-to-deploy-first-filled" basis.

■ Continued funding in the DoD strategic budget to guarantee continued development of the strategic defense initiative, but not at the expense of funds required for con-

ventional Landpower forces.

- Increased funding for research and development projects oriented to emerging advanced technologies, alternate materials and innovative logistics systems.
- Support for the DoD manufacturing methods and technology program and increased emphasis on continuing efforts to improve the production processes.
- Funding to develop a modern forward area air defense system.

Chemical Warfare. The nation's defensive posture could be jeopardized by a single factor on the battlefield—the lack of a credible chemical warfare deterrent.

The Soviets possess an extensive arsenal of modern chemical weapons, delivery systems, protective equipment and an extensive chemical force structure which exceeds reasonable defensive requirements. It is clearly an offensive capability of decisive proportions. Additionally, they have demonstrated a willingness to use such weapons and to support the proliferation of chemical warfare through surrogates.

In the absence of a verifiable ban on development, production and stockpiling, it is national strategy to deter chemical warfare through a strong defense and a retaliatory capability. With support of Congress in recent years, improvements have been made in defense against chemical weapons, including protective clothing, detection devices and equipment.

However, the ability to retaliate is the major component of chemical warfare deterrence. Congress has yet to fund development of offensive chemical weapons which would meet the minimum need for deterring Soviet use of those weapons.

The Army's stockpile of chemical munitions is inadequate, at least 15 years old and largely obsolete. Only ten percent is militarily useful; an additional 18 percent is of limited use and even that which is useful does not provide a deep strike capability, provides the wrong agent mix and uses short range delivery methods. It is estimated that by 1990 the United States will no longer have a militarily useful stockpile of chemical munitions.

Without that stockpile, the Army lacks the capability to force the Soviets to bear the physical and psychological burden of operating in chemical protective gear with the resultant reduction in combat effectiveness: an imposition which they can force on Army units. The Army's vulnerability in this area, the increasing use of chemical weapons and the general desire for rapid completion of a viable ban on chemical weapons make chemical defense and weapons modernization programs crucial.

The purpose of modernizing chemical weapons is to produce a stockpile which is smaller, safer and militarily more useful. This can be accomplished by the development and acquisition of binary munition systems. Also needed are improved defensive measures, including individual protective clothing and equipment, improved detection devices and decontamination equipment.

We therefore resolve to urge Congress to support and fund:

- Production of an adequate stockpile of binary chemical munitions.
- Acquisition of improved defensive equipment to enable the Army to survive and fight in a contaminated environment.
- Increased research, development, tests and evaluation to explore new agents, develop smokes and improve defensive equipment.

War Reserves and the Industrial Base. For the Army to meet the challenge of today's modern battlefield, it must acquire and store sufficient stocks of equipment, ammunition and spares to perform assigned missions until the nation's industrial production base can provide wartime materiel requirements on a sustained basis.

Significant improvements have been made in war reserve stockpiles; however, major shortfalls continue to exist. Force modernization has created shortages of major equipment, ammunition and spares that must be added to war reserve stockage. Inadequate levels of sustainment stocks place deployed and deploying forces at risk when loss and consumption rates increase during wartime.

Maintenance of an industrial base capable of responding rapidly to the Army's wartime needs is imperative. M-day industrial production must be able to surge to meet the increased requirements of the field forces. Industrial preparedness planning provides meaningful steps to enhance the Army's industrial readiness during mobilization or national emergency. Recent funding shortfalls have reduced planning efforts with industry.

American industry is in danger of losing its industrial independence and surge capability to support wartime requirements. The nation must improve its productivity and capability through technological breakthroughs, creative manufacturing processes and economic incentives to assure that American industry can support wartime requirements.

We therefore resolve to urge the Administration and Congress to:

- Support regular stockpile purchases to bring war reserves to adequate levels.
- Support continued industrial preparedness planning.
- Support manufacturing methods and technology programs that will enable industry to regain its competitive edge in industries supporting defense requirements.
- Provide adequate funding for the initiatives already under way, including the industrial modernization incentives program.

Readiness. The Army's readiness goal is a force prepared to mobilize, deploy, fight and defeat the nation's enemies. The means to achieve the desired state of readiness requires tough, realistic training of soldiers, teams, crews, units and commands that stresses leadership. Training must focus on wartime missions and provide experience in combined arms training, AirLand Battle operations and interoperability in combined exercises.

Success on the battlefield demands peacetime training programs for both soldiers and units that challenge them to achieve excellence. It must provide them with requisite skills and confidence to cut through the confusion of the battlefield and accomplish the mission.

Training must provide realistic simulated combat experience, using modern training facilities and simulators, which improve skills while conserving costly ammunition as well as other resources.

We therefore resolve to urge the Administration and Congress to fund programs which provide realistic training through a balance of:

- Modern training facilities, simulators and devices.
- Increased access to the National Training Center.
- Increased emphasis on air and ground crew proficiency training.

We further resolve to urge the Administration and Congress to continue to support and fund the Army's combined arms training and participation in joint and combined exercises.

Forward Deployment. Forward deployed Landpower of the Army provides visible proof of the nation's commitment to freedom.

In recent years, significant improvements have been made in modernizing forward deployed units, manning them with high quality soldiers and upgrading prepositioned stocks. However, shortfalls continue to exist that reduce the capability of forward deployed forces to meet their worldwide missions. They include:

- Reduced sustained combat capability in Europe resulting from congressionally imposed theater manpower ceilings.
- Inadequate combat service support organizations trained, equipped and in place to meet wartime requirements.
- An inadequate logistical support infrastructure necessary to adequately store and effectively maintain deployed unit basic loads, prepositioned materiel and war reserve stocks.
- Shortages of conventional ammunition, petroleum, medical supplies and war reserve stocks to sustain the forward deployed forces until the sea lines of communication are operating.
- Inadequate NATO air/missile defenses to counter the growing Warsaw Pact threat.
- Insufficient progress in achieving the goals of supply compatibility and equipment interoperability among allied forces.
- A need to restation forces in Germany nearer their assigned defense sector.
- Inadequate security assistance levels and lack of legislation similar to the NATO Mutual Support Act, which would authorize Korea and our allies in Latin America and the Middle East to exchange defense articles and services as payment in kind.

We therefore resolve to urge the Administration and Congress to support and fund:

- An increased manning strength that provides for a minimum essential combat services support organizational structure for forward deployed forces.
- Construction of facilities for equipment maintenance, storage of war reserves and unit basic loads for forward deployed forces, and facilities for restationing of forces in Germany to locations nearer their wartime defense sectors.
- Attainment of adequate stockage levels of war reserve ammunition, equipment and supplies to support forward deployed forces until wartime lines of communication can be established.
- Increased levels of security assistance for Korea and our allies in Latin America and the Middle East, as well as legislation similar to the NATO Mutual Support Act.

We further resolve to urge the Administration and Congress to:

- Eliminate the congressionally imposed ceiling on forward deployed forces in Europe.
- Encourage NATO and other allies to

modernize and bolster their air/missile defenses and more aggressively pursue supply compatibility and equipment interoperability.

Strategic Mobility. The Army cannot be expected to accomplish its many diverse and geographically remote missions without the availability and support of sealift and airlift. It is highly dependent on the Navy and Air Force to project Landpower into an objective area in a timely manner.

While the move to create five light divisions will permit more rapid deployment, we will still have a strategic mobility shortfall of approximately 25 percent of the total requirement. The programmed Navy sealift capability is expected to nearly meet requirements by 1991; however, the U.S. Merchant Marine, experiencing years of neglect and deterioration, continues to decline in terms of numbers of ships and those few new ones that have been built cannot be rapidly unloaded except in developed ports.

Airlift capability, although improved, remains critical. While the C-17 is programmed to reduce the airlift shortfall further, initial operational capability for this aircraft is not scheduled until fiscal 1992. Therefore, any slippage in this program would have a grave impact on the timely projection of Landpower.

We therefore resolve to urge the Administration and Congress to:

- Provide sufficient funds for the U.S. Air Force to implement the Airlift Total Force Plan, specifically the C-17 and modernization of the C-5.
- Provide sufficient funds for the U.S. Navy to acquire needed sealift resources to deploy, support and sustain Landpower Forces.

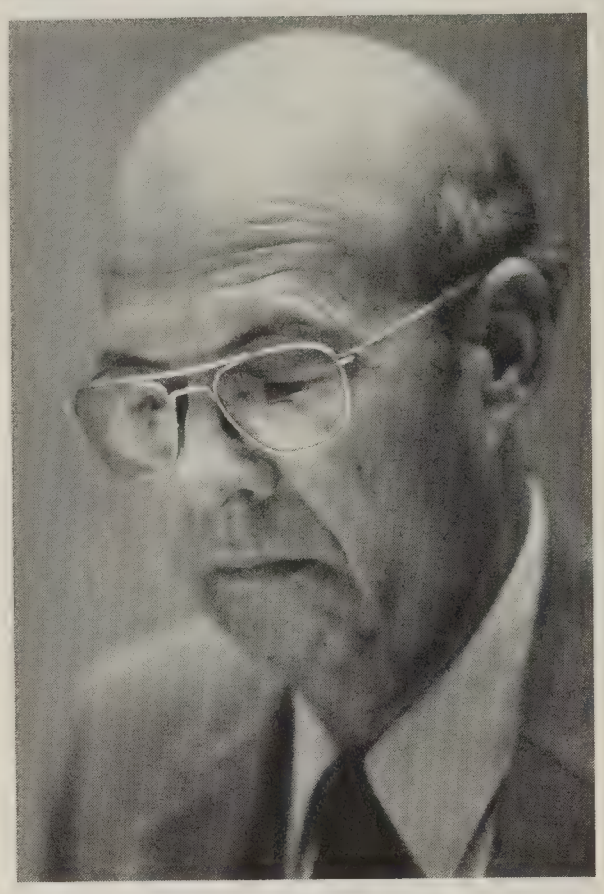
Reserve Components. The reserve components provide nearly half of the soldiers in the Total Army. Consequently, increased dependency on reserve components in meeting Army mission needs requires improved readiness.

Budget constraints and limitations on the size of the active Army mandate the maintenance of full strength, well trained and highly motivated reserve components.

Army reserve components must have incentive programs to compete with other services for members from a shrinking manpower pool.

We therefore resolve to urge the Administration and Congress to:

- Provide medical benefits and extension of pay and allowances for reserve components soldiers who contract disease or incur physical injury during periods of inactive duty for training status.
- Permit post exchange and commissary privileges upon retirement without regard to age.
- Extend commissary shopping privilege to reserve components members and spouses for each day of annual training or full-time training duty performed during the year, not to exceed a total of fourteen days.
- Enact the Reserve Officers Personnel Management Act to provide an officer personnel management program similar to the Defense Officers Personnel Management Act.
- Provide reserve components members performing training duties and who become categorized as "missing" or "hostage" extended pay and benefits until that status is terminated.
- Discourage discrimination against reserve components personnel seeking private sector employment.
- Expand the role of employer support of the Guard and Reserve programs to promote continued cooperation of private and public employers in allowing reserve components soldiers to meet training and educational requirements.



Col. Harry F. Middleton, USA, Ret., resolutions committee chairman.

- Review the full-time manning of the reserve components and take appropriate action to allow realignment of active Guard, Reserve and federal technicians' positions to provide the highest readiness posture, allow for reasonable career planning and progression and maintain the compatible military membership status for federal technicians.
- Increase of compensation for advanced ROTC cadets.
- Change the law to eliminate the disqualification of simultaneous membership program cadets for retirement and longevity earned through reserve components participation.

National Commitment to the Military Profession. There are fundamental assurances owed to the soldier by the nation which should stand inviolate whether based on long-standing tradition or the implied obligation to the volunteer soldier. The basis of this obligation is the uniqueness of the profession of arms. This uniqueness includes the elements of instant obedience to orders, exposure to perils, selfless service, dedication to our Constitution, frequent family separations and abandonment of traditional amenities and comforts of civilian life.

Accepting the unique status of soldiering bears implicit guarantees that a grateful nation will provide for the soldier's basic human needs and those of their families. Soldiers need assurance that these fundamental conditions of service will be met throughout their service and will not be derogated in the political process of addressing other national problems and issues.

Whether titled an "Armed Forces Bill of Rights" or identified by another suitable caption, Congress and the Administration must establish a baseline national commitment to the military profession below which a soldier's entitlements remain untouched. Among those fundamental national commitments to the military profession are the following:

- Adequate funding to research, develop and produce the best possible clothing, personal equipment, and individual and crew served weapons for the soldier.
- That changes in the military compensation and retirement system will be made only after considering the system as a whole.
- A full range of medical and dental care provided through military health care facilities or CHAMPUS for active duty soldiers, retirees and their family members.
- Adequate commissary and exchange systems with continued appropriated funding support.
- A noncontributory retirement system.
- That all proposed legislation affecting entitlements include a "grandfather" clause ensuring that earned benefits are not further eroded.
- Appropriate benefits for reserve components personnel while performing active or inactive duty training.

We therefore resolve to reiterate this Association's strong conviction that this nation, through Congress and the Administration, establish a formal and immutable national commitment to the profession of arms.

Quality of Life. Service life imposes unique challenges on its members and places stress on family relationships and unit cohesiveness. The stress factor is intensified overseas where language and cultural differences exist and is complicated by family separations caused by extended field training.

Today, more soldiers are married than at any other time in the Army's history. The quality-of-life program for soldiers and their families is crucial if we are to maintain a well-disciplined and adequately manned force. Issues critical to sustaining a reasonable quality of life today include housing, recreational and community facilities, education of children and facilities maintenance.

The shortage of adequate housing for soldiers is a continuing major concern. Although renovation and construction programs under way in the Republic of Korea will eventually upgrade and/or replace the deteriorated and older structures in use by the Army, soldiers, DA civilians and their families must continue to live in woefully inadequate quarters until 1990 when the program is completed.

The shortfall of nearly 10,000 family housing units in Europe alone causes more than 5,000 married soldiers to serve unaccompanied tours, which translates directly into increased personnel turbulence in units.

Soldiers assigned to remote sites suffer even greater hardships because of lack of funding to provide leased housing, transportation support and reasonable access to recreational, post exchange and commissary facilities.

Soldiers continue to experience significant out-of-pocket expenses, to include going into debt, just to complete a permanent change of station move. In particular, travel to and from overseas has become a major financial burden because of limitations on various allowances and restrictions on shipment of automobiles.

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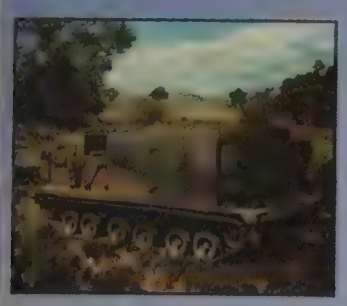
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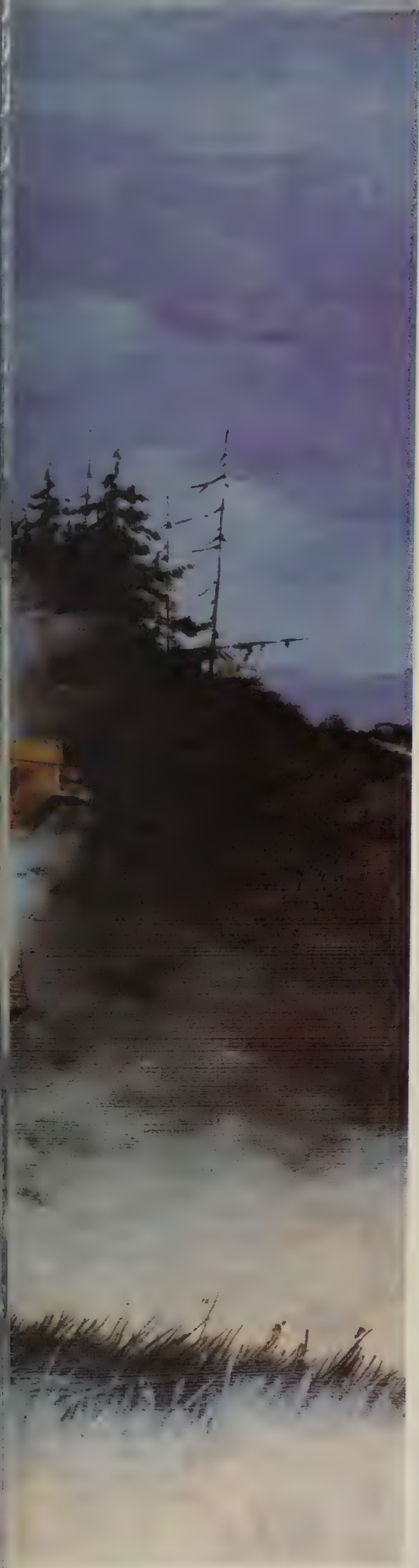


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LTV's design for Army TACMS extends the capabilities of the MLRS launchers to stop the second echelon of attacking forces. As an essential part of the nation's defense, Army TACMS will accomplish the goal of raising the nuclear threshold. The design is low-risk and cost-effective because the basic systems provided by the team members have flown successfully in 16 tests during *Assault Breaker* and prior technology flight test programs.

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L T V : L O O K I N G A H E A D

There are an increasing number of Army families where the spouse is also employed. Single parents have also increased. This situation creates a need to construct additional child care facilities and to staff them with qualified personnel.

Soldiers and their families requiring medical treatment at distant locations are not reimbursed for lodging and meals.

Commissaries provide vital support for active and retired soldiers and their families. The entitlement to use these facilities should not be diminished in any way.

Adequate recreational facilities, especially overseas, are of great value to the physical and mental health of soldiers and their families. Lack of adequate recreational facilities and attendant community support activities often result in boredom, alcoholism, drug abuse and crime, all of which degrade combat readiness.

The federal impact aid program has provided financial assistance to certain school districts, which educate federally connected students. In some instances inadequate funding has forced school districts to propose higher local taxes or to adopt economies which could degrade the quality of education for all children.

Army reserve components soldiers and their families also face separations and unique civilian job pressures which make their military service difficult. Families of these soldiers should be provided assistance to cope with their unique problems and recognition to ensure that they are made to feel needed as a part of the Total Army.

We therefore resolve to urge the Administration and Congress to support adequate funding essential for the Army's quality-of-life program.

We further resolve to urge the Administration and Congress to:

- Provide accelerated funding for adequate troop family housing, transient billets worldwide, and for maintenance and repair of all related facilities, especially in the critical areas of Europe and Korea.
- Provide adequate funding for temporary lodging expenses for stateside moves at $110/day up to four days; increase mileage allowance reimbursements to the current level of other government employees; fund change-of-station per diem for dependents on days of travel; increase dislocation allowance up to two months basic allowance for quarters; and fund stateside travel to the overseas aerial port of embarkation for student travel.
- Continue adequate commissary and exchange systems worldwide supported by appropriated funds.
- Accelerate funding for essential military recreation and community program and facilities for soldiers and their families, worldwide.
- Provide adequate financial assistance to school districts to defray costs of educational services to families of soldiers and civilians residing on or near military reservations.
- Authorize full reimbursement for travel expenses incurred by soldiers and family members for medical treatment at distant locations.
- Provide necessary resources for local transportation support, leased housing, recreational facilities and programs vital to the physical and mental well-being of soldiers and their families residing at remote sites.

Military Compensation. The Army seeks to recruit and retain quality personnel through a compensation system comparable to and competitive with the civilian sector. Comparability of pay was established by the Uniformed Services Pay and Benefits Act of 1981. However, military pay has since been allowed to fall behind the civilian sector.

The military compensation system must include incentives to offset the rigors of military service. The pool of young people for military recruiting is dwindling and the Army will face increased competition for this shrinking resource. A noncomparable military compensation system translates directly into an inability to recruit and retain quality soldiers.

The all-volunteer force educational assistance (AVFEA) program enhances the probability of enlisting and retaining quality soldiers. A modification is required concerning the enrollment procedure. Also, the program does not provide for refund of contributions to participants.

To provide incentives for military service, several inequities must also be remedied. These inequities are:

- Inadequacy of the variable housing allowance (VHA).
- Nonreimbursement for all relocation out-of-pocket costs.
- Discrimination in hazardous duty pay between ranks.
- An Internal Revenue Service proposal would adversely affect the tax treatment of benefits of military homeowners who receive basic and variable housing allowances.
- Insufficient death gratuity payment.
- Noncommissioned officer pay does not compensate for increased responsibilities assumed upon promotion.
- Current limitations promulgated by the Dual Compensation Act of 1964 hinder the Army's effort to obtain the best qualified employees to fill key Department of Army civilian vacancies by discriminating against Regular Army officers. As a result, highly qualified individuals either do not accept or leave government service.

We therefore resolve to urge the Administration and Congress to:

- Reestablish and maintain a level of compensation and incentives comparable to and competitive with the civilian sector that will provide the Army flexible initiatives to maintain the force balance necessary to achieve its mission.
- Ensure an adequate VHA at a level necessary to compensate for actual housing payments in high cost areas.
- Equalize hazardous duty pay for equal risk, regardless of rank.
- Link cost-of-living adjustments to the Employment Cost Index to reestablish and maintain purchasing power.
- Reimburse soldiers for all reasonable costs incurred as a result of a permanent change of station.
- Increase death gratuity benefits to levels recommended by the 5th Quadrennial Review of Military Compensation.
- Restructure the Armed Forces basic pay tables to reflect adequate compensation for added responsibilities upon promotion to the next higher grade.
- Increase Servicemen's Group Life Insurance coverage to $50,000, and provide the same level of lifetime coverage to those eligible for Veterans Group Life Insurance.
- Protect current tax treatment of benefits.
- Repeal the 1964 Dual Compensation Act to allow employment of retired Regular Army officers with no loss in retired pay.
- Amend the AVFEA program to:
  - Allow participants to elect enrollment up to six months after enlistment.
  - Extend authorization to enter the pro-



A corner of the vast industrial exhibit area, which drew a steady stream of visitors throughout the meeting.

gram for a six month period to those soldiers already serving.

- Allow contribution options of either $100 per month for 12 months or $50 per month for 24 months.
- Provide refunds to participants who do not complete their enlistment or later choose not to attend college.

Military Health Care. Military health care is one of the most important benefits provided the Army family, yet there continues to be inadequate medical care to fulfill basic needs.

Impetus must be maintained in the following critical areas to:

- Provide quality, comprehensive and continuing health and dental care programs for active duty personnel, retirees, and their families on a worldwide basis.
- Recognize the increased number of married members by providing funding for the full range of obstetrics and pediatric care at military medical facilities.
- Oppose the imposition of user fees.
- Retain professional incentives to sustain the recruiting and retention of qualified doctors across the range of disciplines.
- Reinforce the Army graduate medical education program and ensure retention of Army medical centers as teaching hospitals.
- Continue employment of contract physicians and contracting for professional health services to assure optimal medical services.
- Insist on mandatory active or reserve military service for physicians and health care specialists who receive federal financial support for their medical education.
- Continue improvement and upgrading of medical facilities by new construction, modification, or renovation and by acquisition of modern equipment.

Additionally, improvements in CHAMPUS should:

- Simplify the CHAMPUS claims procedures to gain more enthusiastic doctor participation and improved quality of service to eligible participants.
- Increase CHAMPUS payments of allowable costs to the 90th percentile level.
- Limit out-of-pocket expenses for catastrophic illness and injury.
- Provide authority for military retirees and their dependents to remain under CHAMPUS rather than transferring to Medicare after age 65.
- Expand CHAMPUS care to include basic preventive medical physical examinations and immunizations annually and to meet school entrance and attendance requirements.

We therefore resolve to continue, on an urgent basis, this Association's support for a comprehensive health care program that meets the needs of soldiers, retirees and their families.

Retired Military Compensation. Retired compensation is a vital component of total military compensation and represents a contractual commitment by the nation.

Erosion of benefits continues along with diminishing purchasing power. Retired pay is reduced compensation for continuing service to the nation after formal retirement from active service. Any reduction in retired compensation will have an adverse impact on current-eligible soldiers and retirees.

Critics who believe military retired pay is too generous need to reexamine the facts. While 20-year retirement does provide 50 percent of base pay, allowances are not included. Thus, after 20 years service, retired pay equates to only 35 percent of full pay and allowances.

Changes to or degradation in military retirement compensation must be made only with a full understanding of the long-range impact of such actions, particularly on readiness and force balance. All pay proposals, including any follow-on actions based on the most recent Quadrennial Review of Military Compensation, must be developed in the context of the Army's ability to recruit and retain soldiers dedicated to giving of their life to defend the nation.

The Uniformed Services Former Spouses Protection Act contains a number of inequities that discriminate against retired service members.

We therefore resolve to urge the Administration and Congress to:

- Continue to support an equitable military retirement compensation system.
- Continue to oppose changes that erode the purchasing power of retired pay.
- Support removal of the inequities in the Uniformed Services Former Spouses Protection Act.



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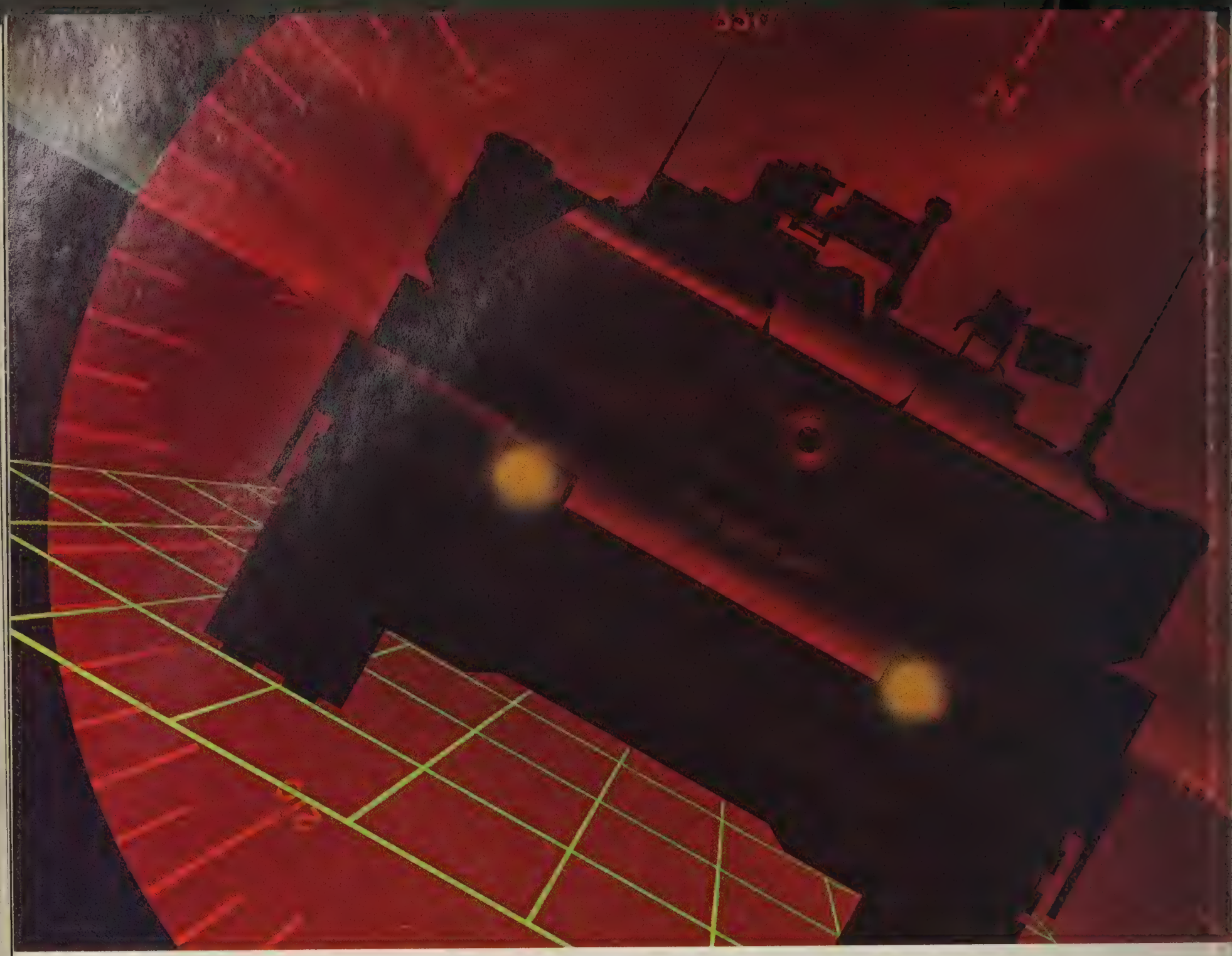
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Shown below are some of the vehicles which can be equipped with the VNAS system.



Hike in Death Gratuity Sought

Legislation that would raise the maximum allowable government death gratuity—the benefit paid to a soldier's family when he dies on active duty—from $3,000 to $9,000 has been submitted to the Office of Management and Budget by the Office of the Secretary of Defense.

The purpose of the benefit, note personnel officials, is to "assist the soldier's family during the initial loss of income as a result of the soldier's death." Under current law, the gratuity is to be paid out at six times the soldier's monthly earnings at the time of his death, with a minimum payment of $800 and a maximum of $3,000 as established by the U.S. Code. Due to increases in military pay scales since the gratuity law went into effect, however, all survivors now receive the $3,000 maximum.

To bring this benefit in line with rises in compensation and the cost of living, the Department of Defense is recommending the death gratuity be computed on three months' basic pay and allowances in an amount no less than $3,000 and no more than $9,000.

The Bulletin Board

By law, only certain individuals are eligible to receive the benefit. The surviving spouse is the first beneficiary. Assuming there is no surviving spouse, payment is apportioned to the children in equal shares.

If there is neither a spouse nor children, the soldier may designate parents, persons *in loco parentis* (in the place of a parent), or brothers or sisters.

PXs to Accept Credit Cards

Post exchanges (PXs) will allow purchasers to use selected credit cards early next year at some locations in the continental United States and at installations throughout the world by next summer, according to a Pentagon spokesman.

The Department of Defense (DoD) is seeking bids from some of the major credit card companies to ascertain which company offers the best rates. If more than one company submits the same lower rate for credit transactions, PXs may be taking more than one type of card.

The transaction fee charged by credit card companies would be paid by the exchanges without raising their prices, said an official who noted that increased sales due to acceptance of the credit cards should outweigh their costs.

First-Term Overseas Tours Extended

Soldiers going overseas as their first assignment are now serving longer tours at five locations based on a DoD decision aimed at reducing PCS (permanent-change-of-station) travel expenses and the turbulence caused by frequent personnel movement.

The five areas affected by the change are: Sigonella, Sicily; Okinawa (Japan); Clark Air Force Base and Manila in the Philippines; and Barbados. At each location, soldiers on accompanied tours must serve for three years and those on unaccompanied tours must serve for two years. Before 1 October, the effective date of the new policy, standard unaccompanied tours in each of those areas were 18 months, while accompanied tours were 24 months at Sigonella, Manila and Barbados.

In an effort to lower military travel expenditures defense-wide, Congress is urging DoD to adopt standard three-year accompanied tours overseas and two-year unaccompanied tours for all of the services.

Gen. Glenn K. Otis, commander of U.S. Army, Europe, has expressed his opposition to the lengthening of tours for first-term soldiers serving 18-month tours in Europe on three-year enlistments. He cites improved morale, less indiscipline and drug abuse, and better retention rates as reasons for maintaining the 18-month tour length in Europe.

Lower Veterinary Fee Proposed

A provision has been attached to the 1986 Defense Authorization Bill which would replace the $10 fee being charged for pet visits to military veterinary clinics with a $2 surcharge payable on all transactions at the clinics.

In the past, active duty and retiree families paid a separate fee for vaccines and drugs and for pet care provided by nonappropriated fund employees working at the clinics. Fees charged by the veterinary clinics go to the local post nonappropriated fund to allow the clinics to continue operating.

Under the 1984 Defense Authorization Act, the clinics were required to charge a $10 fee each time a pet was brought in to compensate for the work of military veterinarians. The $10 fee was not applicable to visits to purchase medicine for the pets. After a one-year delay, this provision became effective on 1 October, with payments going to the U.S. Treasury.

Congress decided to change from the $10 pet visit fee to the $2 all-transaction fee primarily for two reasons: officials felt the $10 fee was too high and might discourage military pet owners from getting the proper care for their animals; second, the fee system was described as an "accounting nightmare." The $2 surcharge on all transactions will be much simpler to keep track of because the veterinary clinics do not need to record different types of transactions.

While the military clinics do provide care for appropriate pet owners as their work load permits, their primary mission is the treatment of working military dogs and the quarantining for disease control of wild animals found on installations.

SFC Promotions Now Based on Specialty

The Army has established new criteria for promoting soldiers to sergeant first class (SFC) so that the needs of the military occupational specialty (MOS) in which the soldier is serving is the determining factor rather than strict seniority.

This change in policy is intended to "align the noncommissioned officer corps and reduce overages and shortages," according to a spokesman for enlisted programs. In the past, staff sergeants have been placed on the promotion list and promoted based on longevity in that rank, whether or not a particular MOS was in need of sergeants first class. The seniority method, which has been followed for the previous 15 years, has resulted in significant strength imbalances in certain MOSs, noted the official.

The new policy will go into effect with the next SFC promotion list, which is expected to be released in February. The single promotion list is being replaced by 194 separate ones for each of the MOSs. "This change only affects the date the soldier gets promoted," said the official. "It will not affect the number of soldiers the Army promotes in each MOS."

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L119 British Howitzer Tested For Use With Light Divisions

The Army's Armament Research and Development Center in Dover, N.J., is conducting tests on the L119 British light gun to determine its suitability as a successor to the towed M102 105-mm howitzer for use with the service's new light divisions.

The L119, a product of Royal Ordnance Factories (ROF), was chosen as the most likely candidate for the light division role through the nondevelopment item (NDI) program, under which scientists and engineers consider foreign and domestic technology already manufactured and fielded for addition to the U.S. arsenal.

News Call

At the time the Army decided to go ahead with the light division concept, the M102 was the only gun available for organic artillery support. The design, however, was 20 years old "with a relatively short range and limited growth potential," according to one official. Under the NDI program, researchers at the Dover facility narrowed the selection down to four guns through market investigation and then decided on the L119.

In making this choice, the Army was looking for a compact weapon that was light enough to be transported in numbers with ammunition and support materials by aircraft specified for light division artillery such as UH-60 Black Hawk helicopters and the Air Force's C-141 transport aircraft. Additionally, the weapon had to use U.S. types of 105-mm ammunition.

"The L119 will not be subject to design changes and will require minimum testing," said one official. The British Army model, the L118, has been in service since 1974, including combat in the Falkland Islands.

The L119 weighs 4,000 pounds and has a tube life of 8,700 rounds. With a 119-inch tube (about 30 calibers), the weapon has a burst rate of fire of 15 rounds per minute and a sustained rate of three to four rounds per minute. It is ideally operated with a six-man crew, but may be operated by only three, according to evaluators.

The L119 is essentially the L118 carriage and mount fitted with ROF's L20 ordnance, whose internal dimensions are sized to the U.S. M1-series of 105-mm ammunition, so greatly extended range is potential rather than actual at this stage of the project. ROF data show the maximum range of the L119 to be 11,500 meters, essentially the same as the M102 and the venerable M101.

In the L118, maximum range with the electrically primed British ammunition is listed at 17,200 meters, but this is accomplished with a tube nearly 16 percent longer (about 34.5 calibers) having a double-baffle muzzle brake. The shorter L20 tube has a single-baffle brake and employs the U.S. percussion priming system. Enormous stocks of U.S. 105-mm artillery ammunition exist, of course, not only in the U.S. Army but in other nations, and this must be taken into account in any new weapon for the light divisions.

If L119 tests are successful, the period of transition from concept to type classification could be as short as 18 months. The Army would purchase about 500 guns over five years, beginning in fiscal 1987.

Guard May Take Over Facilities. The Army is studying the feasibility of transferring control of five semiactive mobilization installations to the Army National Guard. The five posts are Ft. Buchanan, P.R.; Ft. Chaffee, Ark.; Ft. Indiantown Gap, Pa.; Ft. McCoy, Wisc.; and Ft. Pickett, Va. Transfer of the Wingate Depot Activity in New Mexico is also being considered.

The purpose of the study is to determine whether the move will expand use of the installations by both active and reserve components. The facilities named are described by the Army as being "critical to reserve components training and mobilization requirements."

Officials noted that the overall missions of the installations will not be altered. The study is scheduled to be completed by 1 April, 1986, and if the transfers are found to be feasible, they will go into effect on 1 October, 1986.

USMC Tests Composite Armor. A lightweight composite hull, mounted on an M113 armored personnel carrier, is undergoing extensive testing by the Marine Corps at Camp Pendleton, Calif., during the next several months as part of the service's amphibious vehicle development program.

The modified M113 hull was submitted by the Martin Marietta Corporation after field testing at its Baltimore Aerospace facility. The hull is made of "a reinforced plastic material covered with ceramic tiles, resulting in an approximately one-inch-thick system," according to company officials, and is intended to provide greater protection than traditional aluminum armor plate at an equal or lighter weight.

JSTARS Contract Awarded. A $657 million five-year contract for the development of the joint surveillance target attack radar system (JSTARS) has been awarded by the Air Force to Grumman Aerospace Corporation, Bethpage, N.Y. JSTARS is a program designed to enable Army and Air Force commanders to de-



This M113 armored personnel carrier is equipped with a specially designed and fabricated composite protective hull developed by Martin Marietta Corporation for the U.S. Marine Corp's amphibious vehicle technology development program.

tect enemy targets at the forward line of battle and at some distances behind it, and to direct fire upon those targets using advanced radar and control equipment mounted on patrolling aircraft.

The program is being managed by the Air Force's Electronic Systems Division, Hanscom Air Force Base, Mass. A spokesman for the division said Grumman will design, construct and test two complete radar systems, which will be operated from C-18 aircraft (modified versions of the Boeing 707). In addition to the radar equipment, the C-18s will carry operations and control displays and communications links for maintaining coordination with ground terminals and weapons systems.

As a result of the memorandum of agreement signed last year by the Army and Air Force chiefs of staff, the two services are working together to develop JSTARS and other shared weapons systems. JSTARS is intended to provide a detection and attack control system suitable for the Army's AirLand Battle doctrine. The system will allow Army artillery and ground-based missiles to zero in on critical enemy targets, while the Air Force will utilize direct-attack aircraft and missiles.

With Grumman overseeing full-scale engineering development of the JSTARS program, other major contributing firms include Boeing Military Airplane Company, United Technologies' Norden Systems Division and Motorola Corporation. Boeing will modify its commercial aircraft to receive the radar and support equipment being developed by Norden. Motorola is developing "ground station modules"—five-ton trucks with shelter—and smaller equipment for rapid deployment with the Army's light forces.

Test flights for the JSTARS aircraft may begin in three years, and a production decision would follow two years later.

Course Needed for Promotion to E6. All soldiers must successfully complete the primary leadership development course (PLDC) for noncommissioned officers before promotion to staff sergeant, effective 1 July, 1986, the Army has announced. E5s on the standing list for promotion to staff sergeant who have not completed the PLDC will have their names removed from the list on 30 June.

Soldiers who have completed a primary noncommissioned officer course (PNCOC) or a primary leadership course (PLC)—precursors of the PLDC—or a resident basic noncommissioned officer course before 1 January, 1986, will be considered to have met the requirement, according to a personnel official.

For the benefit of those soldiers who would otherwise lose eligibility for promotion to E6, the Army is restricting attendance to the PLDC between January and June 1986 to sergeants E5. It has been estimated that more than half of the soldiers on the E6 standing promotion list, nearly 20,000 E5s, have not attended PLDC.

GENERAL OFFICER CHANGES

Brigadier Generals: **L.D. Budge** from DDORM, ODCSOPS, to ADC, 9th Inf. Div. (Mtzd); **R.W. Crossley** from CG, V Corps Art., USAREUR, to CS, V Corps, USAREUR; **C.E. Fernandez Jr.** from ADC, 9th Inf. Div. (Mtzd), to DMPB, ODCSPER; **D.L. Funk** from PM, TADS/PNV, AMC, to ADUSD, OSD(TWP); **J.H. Johnson Jr.** from CFPA, ODCSOPS, to DDORM, ODCSOPS; **G.A. Joulwan** from EAC, OJCS, to DCSS, ODCSOPS; **Stephen Silvasy Jr.** from Cdr., 2nd Bde., 82nd Abn. Div., to DDCAA.

■ ***DDORM**—Deputy Director for Operations, Readiness and Mobilization; **DMPB**—Director of Manpower, Plans and Budget; **PM, TADS/PNV**—Project Manager, Tactical Air Defense System/Pilots Night Vision; **ADUSD, OSD(TWP)**—Assistant Deputy Under Secretary of Defense, Office of the Secretary of Defense (Tactical Warfare Programs); **CFPA**—Chief, Force Planning and Analysis; **EAC**—Executive Assistant to the Chairman; **DCSS**—Director of Combat Support Systems; **DDCAA**—Deputy Director, Concepts Analysis Agency.*

Foreign Area Officer Changes. A plan designed to enhance the foreign area officer (FAO) program has been approved by Army Chief of Staff Gen. John A. Wickham Jr. The plan calls for reducing the number of FAO slots by about 50 percent while raising the criteria for entrance into the program and offering those accepted a better overall education.

The Army has already begun reducing the positions to be filled by its 3,000 partially and fully qualified FAOs from between 1,100 and 1,200 slots to 750. Ultimately, the goal of the program is to carry about 1,500 fully qualified FAOs to fill the reduced number of slots.

While numbers are being cut, the quality of the foreign area specialists is being improved through more stringent entrance requirements and a phased education program. The stiffer entrance criteria include:

- A Defense language aptitude test battery score of 90 and 110 for the most difficult languages.
- GRE (graduate record examination) scores which will permit entrance into the best graduate schools in the country.
- Branch qualification with a strong military record.
- Ability to be granted a top secret clearance.
- No history of chronic family health problems.

As in the past, FAO development will proceed through four phases, but with some major changes. In the initial phase, the six-month FAO course at Ft. Bragg, N.C., is being replaced by a shorter TDY (temporary duty assignment) entry-level course which focuses on FAO orientation and specific required skills.

In an effort to eliminate weak linguists early, language training is being offered during phase two. With the language skill acquired as a tool of study, the officer will attend graduate school in phase three. Finally, the FAO will enter the in-country phase, where advanced language training will be emphasized.

Those who complete the program will serve as attachés, security assistance officers and political-military analysts on high-level staffs throughout the world.

Army to Train Air Force MPs. Some 7,400 Air Force security police will receive Army infantry training each year, beginning in fiscal 1987, according to Defense Department officials. The Air Force personnel will be trained to provide air base ground defense at overseas installations.

The training program is the outcome of an initiative developed in the extensive 1984 memorandum of agreement between the chiefs of staff of the Army and Air Force. Based on that agreement, the training of Air Force security personnel was to start on 1 October, the beginning of fiscal 1986. That date had to be changed to early fiscal 1987, however, due to the large number of logistical details which had to be worked out, such as the formulation of an overall training program, the selection of appropriate training sites and the assignment of personnel to the program.

Nationwide Muster for IRR. Some 20,000 members of the Individual Ready Reserve (IRR) are being called to musters next month at 13 locations across the continental United States in compliance with a congressional mandate outlined in the fiscal 1986 Defense Authorization Bill.

The purpose of the nationwide muster is twofold: to determine the adequacy of the present call-up plans and procedures and to gain information on the physical condition of IRR members and their retention of military skills. The authorization bill requires the Army Reserve to perform the muster and report to Congress on its findings by the end of February. Depending on the outcome of this initial call, larger musters may be conducted which would include all of about 290,000 IRR members worldwide.

Those being called to the January muster were sent letters informing them of it in November. Orders go out this month for the voluntary formation. Individuals who do attend the day-long weekend musters will not be required to wear uniforms or have military haircuts. Each will undergo a medical screening, which

will consist of height and weight checks, a blood pressure test and a medical interview. IRR members will also take a written common soldier skills test.

The 13 locations for the January musters are: Charlotte, N.C.; Cincinnati, Ohio; Denver, Colo.; Indianapolis, Ind.; Miami, Fla.; New Haven, Conn.; Oakland, Calif.; Phoenix, Ariz.; Pittsburgh, Pa.; San Antonio, Tex.; Seattle, Wash.; Springfield, Mass.; and Tampa, Fla.

Wainwright Gets Light Division. The Army has announced the selection of Ft. Wainwright, Alaska, as the headquarters site for the new 6th Infantry Division (Light). The division flag, however, will be at Ft. Richardson, which is adjacent to Anchorage, until proper facilities are built at Ft. Wainwright to house the division. A minimum of 700 off-post family housing units need to be constructed to handle the influx of personnel.

The 172nd Infantry Brigade (Separate), headquartered at Ft. Richardson, has been slated to form the nucleus of the new division. Along with a second regular Army brigade, the division will be rounded out by the Army Reserve's 205th Infantry Brigade, which has cold-weather capabilities and is stationed at Ft. Snelling, Minn.

Ft. Wainwright is situated on some 917,000 acres near Fairbanks.

Helmets Found Substandard. The Department of Defense (DoD) has revealed that 461,000 of the Army's new Kevlar helmets did not meet ballistic test specifications when evaluated earlier this year at the Natick Development Center, Natick, Mass.

DoD has notified the manufacturer of the substandard helmets, Gentex Corporation of Carbondale, Pa., and is seeking a remedy based on its rights under the contracts awarded for the helmets. Among the actions being considered, DoD may require replacement or alteration of each helmet determined to be below standard.

Ballistic tests conducted last spring on the helmet demonstrated that it provided more protection than the M1 steel helmet, but considerably less than was called for under the contract. Gentex saved money by layering separate pieces of the Kevlar fiber rather than producing the layered Kevlar helmet from a single piece of material, an Army spokesman alleged. The procedure used by the manufacturer is estimated to have saved in excess of $42 on each helmet produced.

Gentex was awarded its first contract in February 1983 to produce 253,460 helmets at a unit cost of $82.50 during calendar years 1984 and 1985. Gentex acted as subcontractor for two other firms awarded contracts in 1983 to produce 240,440 of the Kevlar helmets at the same price. The Army received and paid for 461,000 helmets, while informing Gentex it will not accept the rest of them until contract specifications are met.

Vietnam MIA Search Agreement. The United States and Vietnam have "agreed in principle to a joint excavation of a crash site in the Hanoi-Haiphong area," in an effort to identify the remains of some Americans among the more than 2,400 classified as missing in action (MIA) in Indo-China, according to a Department of Defense announcement.

The government in Vietnam released 26 remains this past summer, and meetings since that time between U.S. and Vietnamese officials to resolve the status of American POWs (prisoners of war) and MIAs have been described as encouraging. While no specific date has been set for the joint U.S.-Vietnamese excavation pending further technical meetings, officials are hopeful it will take place in "the near future." The investigation involves the crash site of an Air Force B-52 bomber. If the experimental joint search is successful, similar searches are expected to be agreed upon.



The L119 British light gun shown here is being evaluated by the Army's Armament Research and Development Center, Dover, N.J., as a possible successor to the M102 105-mm howitzer for use with the service's light divisions.

Automated Explosives System. The Army is developing a method of loading defensive explosives in preset underground pipelines whereby all handling of materials is done by machine.

"The concept, the tactical explosive system (TEXS), is to lay a pipeline in a potentially strategic combat area and pump a liquid explosive into the pipeline," notes an official with the Army Research and Development Center, Dover, N.J. Skid-mounted pumps on five-ton trucks pump the liquid explosive into pipes at designated locations.

Normally, several thousand pounds of the explosive would be pumped into a 300-meter stretch of plastic pipe set in a deep, backfilled trench and covered. As an enemy approaches the strategic area, the explosive is detonated creating a crater-type obstacle. The TEXS has been successfully tested at a number of sites in the United States, West Germany and South Korea.

Smithsonian Wants Uniforms. The Smithsonian Institution's National Museum of American History is looking for post-World War II uniforms to upgrade its permanent reference collection and for possible use in a future display tracing the history of the average citizen's experience in the armed forces.

"The museum is particularly interested in battle-dress uniforms from the Korean and Vietnam war eras," said an official from the Smithsonian's Division of Armed Forces History. "We are also looking for dress-blue uniforms and mess dress uniforms," he added. "We want uniforms that are in good condition and still have the appropriate unit, rank and name patches on them that would have been there while they were being worn," noted the official.

Persons interested in donating uniform articles should write to the museum and indicate the types of uniforms they have before sending anything so that a determination can be made as to whether the items are needed. Smithsonian officials will explain how individuals can have their uniforms appraised for those wishing to write off their donations as tax deductions. Those corresponding with the museum should include their telephone numbers. They may write to: Dr. Edward Ezell, Division of Armed Forces History, Room 4103, National Museum of American History, 14th St. and Constitution Ave., N.W., Washington, D.C. 20560.

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A night-vision system for military helicopter pilots is so versatile that it can be used on a wide variety of missions from either helicopters or fixed-wing aircraft. The Aviator's Night Vision Imaging System (ANVIS) is a helmet-mounted binocular that intensifies nighttime scenes illuminated by faint moonlight or starlight. It uses advanced optics and mechanical components to offer high performance in a rugged lightweight package. Applications include covert night combat, troop transport, search and rescue, minesweeping, escape and evasion, refueling, reconnaissance, and support. Hughes Optical Products, a Hughes Aircraft Company subsidiary, builds ANVIS for the U.S. Army.

A device that will help combat vehicle drivers see through darkness, smoke, and haze has been designed to be low in cost and rugged enough to survive environmental extremes. The Driver's Thermal Viewer (DTV) is a compact thermal imaging system planned for the U.S. Army's M1 Abrams tanks, M2/M3 Bradley Fighting Vehicles, and M60A3 tanks. Hughes is building 2 proof-of-design and 18 engineering development models to "fine tune" the design and smooth the transition to full production. The units will be subjected to extensive testing and evaluation so any design changes can be identified early enough to avoid production delays or cost increases. The DTV, designated the AN/VAS-3, is designed to be extremely reliable and require minimal maintenance support. It produces a TV-like image by sensing variations in temperatures between objects and their backgrounds. It will replace a device that amplifies ambient light.

Technological enhancements have improved the performance of a system used in U.S. Navy ship-to-ship and ship-to-shore communications. The secure voice switch (SVS), designed and built by Hughes, is a processor-controlled, solid-state radio telephone switching system that allows simultaneous transmission of clear and secure voice messages. New large-scale integrated circuit devices, using the latest HCMOS technology, now provide expanded switching capacity in the same space, plus nonsecure switching between encoding and transmitting equipment. The new system also adds data switching to SVS voice capability. The hardware was developed for the Navy's new Landing Helicopter Dock Ship.

An Amraam missile bored through radar clutter to intercept a drone aircraft target in the second guided launch of the full-scale development program. The test firing was the third consecutive launch of the advanced medium-range air-to-air missile, under development by Hughes for the U.S. Air Force and Navy. An F-15 launched the missile in a "look-down, shoot-down" tail-aspect attack while flying at Mach 0.9 approximately 16,000 feet above the desert floor at White Sands Missile Range. The QF-100 target flew at Mach 0.7 only 1,000 feet above the ground. The Amraam flew the first part of its flight under control of its on-board inertial reference unit, using target coordinates provided in prelaunch by the F-15's Hughes APG-63 radar. The missile then switched to its own active radar for guidance and tracked the drone through the heavy ground clutter to intercept.

Lasers will help halve the cost of inspecting metal parts for fighter aircraft radars when a new manufacturing technique goes into effect at Hughes. Advanced optics technology will be used to inspect newly fabricated radar antenna plates in three dimensions. Besides lowering costs, the process will reduce errors. The project is part of an Industrial Modernization Incentive Program (IMIP) awarded by the U.S. Navy and Air Force to help create the electronics factory of the future. IMIP is a share-the-savings concept that will reduce costs of the F-14, F-15, and F/A-18 radar programs by more than $10 million, while improving the quality and reliability of the systems.

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Mixing History and Biography

Lively, Balanced View of Airborne Operations

Ridgway's Paratroopers: The American Airborne in World War II. *Clay Blair. The Dial Press, Doubleday & Company Inc., 245 Park Ave., New York, N.Y. 10167. 588 pages; bibliography; notes; maps; photographs; index; $19.95.*

By Col. Charles B. MacDonald
U.S. Army Reserve, retired



In the early days of the Army airborne forces: paratroopers in training are preparing to board C–47 transport aircraft in October of 1942.

With this book, Clay Blair emerges in the front rank of American military historians. Although he lacks personal experience in military operations (his service in World War II was at sea),

Books

e amply demonstrates a mastery of the rganization, weapons, tactics, strategy nd methods involved. When combined ith prodigious research, that mastery of he subject lends what he writes a solid uthority.

With *Ridgway's Paratroopers*, he has rovided, in effect, two books: a biogra- hy, through World War II, of the distin- uished airborne commander Gen. Mat- hew B. Ridgway and at the same time history of the origins of American air- orne forces and their operations in the ar, with emphasis on the Mediterranean nd European theaters, with which Gen. idgway was so closely identified.

This is no authorized biography in the nse that Gen. Ridgway had any say in ie final product, but he did assist with aterials and interviews. The result is oroughly balanced, for even though e author clearly admires his subject, he not averse to including views of some ho do not fully share that admiration.

It is also a lively work. In describing e three most prominent American air- orne commanders, then-Maj. Gen. Ridg- ay, then-Maj. Gen. Maxwell D. Taylor the 101st Airborne Division and then- aj. Gen. James M. Gavin of the 82nd irborne Division, author Blair quotes a ntemporary:

> Ridgway would cut your throat and then burst into tears. Taylor would cut your throat and think nothing about it. Gavin would cut your throat and then laugh.

By recounting all the airborne opera- ons in considerable detail, the author ises the question—at least in this review- 's mind—as to whether the airborne rces were worth such a vast expendi- re of resources and an even vaster claim elite manpower. For, with one exception—and that not a jump into enemy territory but into an established, albeit hard-pressed, beachhead at Salerno—none of the operations accomplished what the planners and commanders expected of them.

A one-battalion drop in North Africa was a disaster. In Sicily, the paratroopers were scattered to hell and back, many of them drowned in the sea when Allied antiaircraft fire shot down their planes. A one-battalion drop beyond the lines in Italy was also a disaster.

In the Normandy invasion, troop carrier aircraft again scattered the paratroopers like windblown confetti, and gliders crashed right and left into buildings and hedgerows. That the airborne troopers made substantial contributions to the success of the invasion goes without saying, but those contributions were more the result of personal heroism and ingenuity than of design.

However successful the drops of two American divisions in Operation Market in September 1944 in Holland, the operation must be deemed a failure, for a British airborne division did not maintain a bridgehead over the Lower Rhine through which British ground troops might outflank the Siegfried Line and break into northern Germany.

Operation Varsity, the big airborne operation in support of Field Marshal Sir Bernard L. Montgomery's crossing of the Rhine River, must also be deemed a failure. Partly because Field Marshal Montgomery's preparations were so grand and obvious, the Germans had shifted such strength as they had to that sector, and losses among the 17th Airborne Division and a British division were heavy, infinitely higher than those incurred nearby by two American infantry divisions making a traditional assault by water.

Indeed, it can be said that the American airborne divisions made their greatest contributions in traditional ground roles: for example, the 82nd and 101st Airborne Divisions in the Battle of the Bulge and in the ensuing drive deep into Germany.

As Mr. Blair tells us of other airborne operations that were proposed but not mounted, the reader is left with relief that somebody said "no" to all of them.

However great the valor of the men involved, would not the volunteers, who often served as privates in the elite airborne units, have contributed more in regular divisions, where they surely would have emerged as noncommissioned or junior officers?

With today's vastly improved capabilities for shooting down aircraft, the question of whether we will again see major airborne operations may well be moot. In any event, to read the history of Gen. Matthew B. Ridgway and the airborne forces as Clay Blair tells it is to be swept up in the march of moving and momentous events.

COL. CHARLES B. MacDONALD, U.S. Army Reserve, retired, is a former deputy chief historian at the Army's Center of Military History. He is the author of Company Commander *and* A Time for Trumpets: The Untold Story of the Battle of the Bulge.

Operations in Vietnam

'Tribute to the Men Who Fight'

The Rise and Fall of an American Army.
Capt. Shelby Stanton. Presidio Press, 31 Pamaron Way, Novato, Calif. 94947. 448 pages; index; bibliography; maps; photographs; $22.50.

By Gen. William E. DePuy
U.S. Army, retired

The title of this excellent book is somewhat misleading. Capt. Stanton, a former paratrooper and Green Beret and an emerging historian of eminence, has written by far the best book yet published about U.S. soldiers and Marines in combat in Vietnam.

The larger political and operational issues are woven around his description of 82 specific and separate operations as a parallel but secondary theme. Central to that theme, however, is the transformation of the actual war on the ground from the level of counterinsurgency to the clash of great national armies as both North Vietnam and the United States, respectively, massively reinforced the Vietcong and the government of South Vietnam.

His word pictures of the violent encounters of that war are clear, evocative and authentic. Although framed in their operational context, the battles are described in terms of the soldiers who fought them. Those men will recognize the battles in all their sadness and terror, as well as in the overpowering feelings of elation and triumph which crown victorious engagements.

Capt. Stanton greatly admires the style and aggressiveness of certain elite units. He bluntly notes, however, the marginal performance of others which were thrown together too quickly and were indifferently led.

Without fully developing the issue, Capt. Stanton nonetheless explains the operational objectives established in 1966, which were all classically related to the counterinsurgency effort and conspicuously ignored the implications of the major deployment to the south of the North Vietnamese army.

As a service to readers interested in obtaining books reviewed in *ARMY*, the mailing address of the publisher is included in the head notes for each main review and Varied Fare item. Readers are reminded that neither *ARMY* nor AUSA has the facilities to order books for them or to handle the related correspondence; inquiries and orders must be directed to the publisher.
The Editors

For example, the mid-1966 goals were attrition of the Vietcong and the North Vietnamese army equal to the replacement capability, elimination of base areas, opening of roads, securing the population, pacifying priority areas, and defending bases, cities and food production.

The attainment of the counterinsurgency objectives was, of course, entirely contingent on the defeat of the enemy's main forces. Couched as it was in terms of attrition and devoid of any real chances of success, this futile application of force lay at the heart of the Vietnam tragedy and the squandering of the U.S. Army.

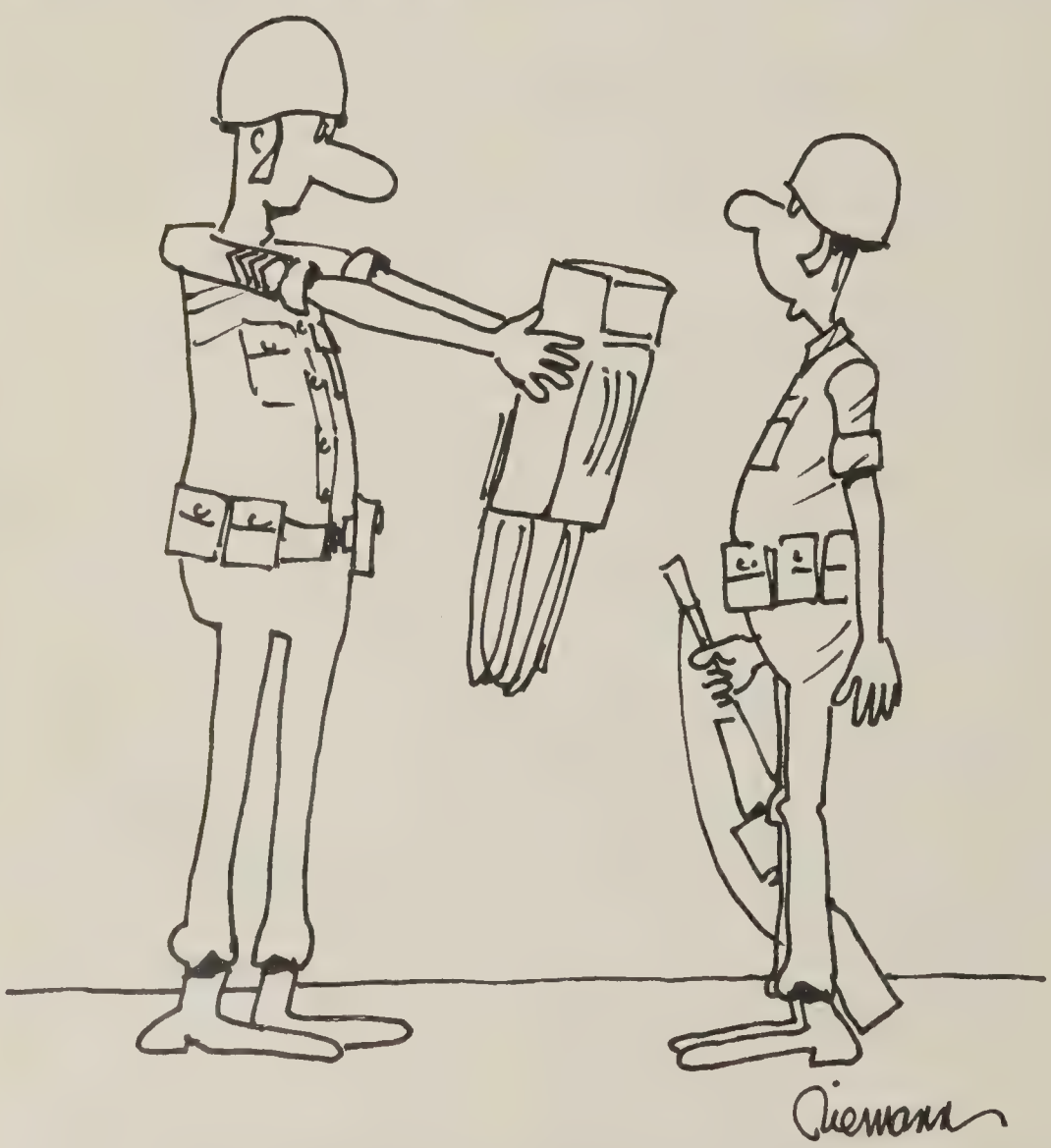
Against this background, the author traces the growing frustration of the troops and the Saigon command as the North Vietnamese army and Vietcong main forces made increasing use of the cross-border sanctuaries to meter their losses and stay in the game. Capt. Stanton notes the decline in effectiveness of the Army as it was consumed by the longest of all American wars. But in doing so, he is careful to note the continuing willingness of the soldiers and Marines to fight as long as they were well led.

This book is, at bottom, a tribute to the men who fight at the platoon, company and battalion levels. It is not a tribute to the high command in terms of operational wisdom, nor to the overall management of U.S. military resources. Capt. Stanton's final paragraph conveys his net assessment.

> The United States Soldiers and Marines in Vietnam fought through some of the most difficult terrain in the world and won some of the toughest encounters in American military history. However, they fought without benefit of the country's larger military machine programmed for their support in case of war. The Reserves and National Guard were notably absent in the Vietnam conflict. The magnificent courage and fighting spirit of the thousands of riflemen, aircraft and armor crewmen, cannoneers, engineers, signalmen and service personnel could not overcome the fatal handicaps of faulty campaign strategy, incomplete wartime preparation, and the tardy superficial attempts at Vietnamization. An entire American Army was sacrificed on the battlefield of Vietnam. When the war was finally over, the United States military had to build a new volunteer Army from the smallest shreds of its tattered remnants.

We must hear more from this young and very promising military writer and historian.

GEN. WILLIAM E. DePUY retired in 1977 as commander of the U.S. Army Training and Doctrine Command. He served in Europe in World War II and commanded the 1st Infantry Division in Vietnam.



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Thoughtful, Comprehensive Review'

Master of War and His Words

lausewitz: Philosopher of War. *Raymond Aron. Translated by Christine Booker and Norman Stone. Prentice Hall Inc., Englewood Cliffs, N.J. 07632. 418 pages; index; $17.95.*

By Col. T. N. Dupuy
U.S. Army, retired

This is a book about the greatest of military philosophers by one of the eat politico-military thinkers of our mes. It is, unfortunately, almost as dif- cult to read as is the book—*On War*—hich is its point of focus. This is, of urse, because serious writing is not sy reading. But the reward is great to e reader who perseveres.

Unfortunately, this translated English ersion does not include some important atures that were in the original French nd in the translated German versions. r instance, it omits an appendix devot- l to the genius of Gen. Gerhard Scharn- rst, the mentor of Gen. Karl von Clause- itz. This is a serious omission, since ere are some scholars of war who be- ve that Gen. Scharnhorst was the only ne of Napoleon's opponents who fully nderstood the genius of the French em- ror. Because of his untimely death, wever, Gen. Scharnhorst has been ne- ected by most non-German military his- rians; it would have been interesting, d probably instructive, to read Mr. ron's assessment.

Nevertheless, what is included in this ry substantial book is worth reading. is the most thoughtful, comprehensive view of Gen. von Clausewitz and his asterwork, *On War,* that has come to y attention.

Though the author is a political scien- t rather than a military man, his un- rstanding of the military implications *On War,* or the "Treatise," as he calls is almost as profound as is his master- presentation of the political, economic d social implications and relevance. (A w small instances of lack of military rception—such as confusing "morale" th "moral forces," for instance—may be ributable to the translators, although e opening sentence of chapter five sug- sts that Mr. Aron himself may have ffered from the confusion.)

I had hoped to find that Mr. Aron had scovered—as I believe that I have dis- vered—the fundamental significance of e passage in *On War* that I consider to the heart of Gen. von Clausewitz's eory of combat: those paragraphs in apter eight of book III which I call ne law of numbers."

Author Aron shows that he at least partially recognizes this significance, when he quotes the first paragraph of the "law." But he focuses so much on the fashion in which Gen. von Clausewitz shows the interaction of moral forces with numbers that he fails to capture either the mathematical relationship of the factors determining the outcome of combat or Gen. von Clausewitz's assertion of the historical and universal immutability of that relationship.



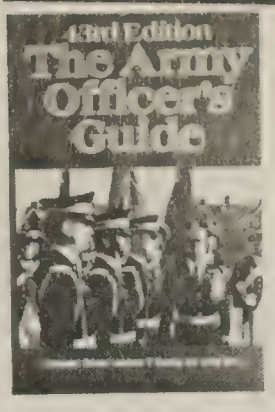
Nevertheless, author Aron recognizes enough of Gen. von Clausewitz's meaning to discredit thoroughly those critics who misinterpret the significance which Gen. von Clausewitz gives to numbers in war. Mr. Aron points out that careful reading of the relevant passages in *On War* will make very clear that Gen. von Clausewitz never suggested—as Sir Basil Liddell Hart and some of his contemporary followers would have us believe—either that quantity in battle is more important than quality or that the massing of superior numbers is more important than maneuver.

Gen. von Clausewitz believed that skill—or "genius," as he liked to call it—could go through a mathematical process, combining numbers with factors representing the circumstances of combat and the relative quality of the opposing forces to calculate relative combat power and predict victory. From the way he writes about this, Mr. Aron apparently understands that Gen. von Clausewitz was thinking of a numerical solution to a mathematical process and not of sheer numbers.

Even more satisfactory is the way in which Mr. Aron demonstrates that Gen. von Clausewitz would never have accepted the concept of "operations" or of "the operational art" as a level of military thinking and activity midway between tactics and strategy.

I have long held that the introduction of this concept confuses a dialectical relationship which is essential to the two concepts of strategy and tactics as defined by Gen. von Clausewitz (and others, such as Baron Antoine Henri Jomini). I am grateful to Mr. Aron for having shown me how and why this would have been inconsistent with the thinking of Gen.

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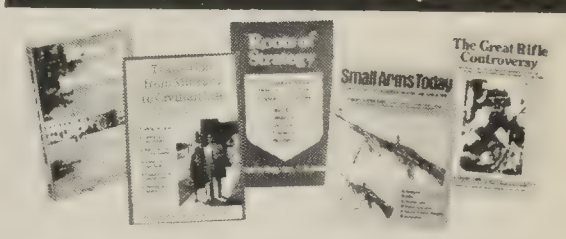
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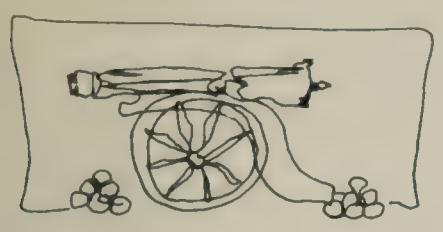
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von Clausewitz, who could, however, have accepted operations as an element of strategy, at its lowest level, above tactics.

Despite my enthusiasm for the book, I was puzzled by one apparent inconsistency in Mr. Aron's thinking. In the introduction to parts IV and V of his book,



author Aron refers to Sir Liddell Hart as "the greatest military writer of our age." This is despite the fact that he had earlier demolished the basis for Sir Liddell Hart's criticism of Gen. von Clausewitz as "the Mahdi of mass and mutual slaughter." He then goes on to show how Sir Liddell Hart not only did not understand Gen. von Clausewitz's concept of combat processes but also was equally confused by the general's views on the relationship of war and policy.

Nevertheless, Mr. Aron calls the English writer "the most intelligent, and also the most typical, opponent of Clausewitz writing in the English language. He is too intelligent to fail to see that Clausewitz was greater than his disciples, and too English to devote months to unravelling this skein of logical and empirical propositions, of theory and doctrine."

In other words, Mr. Aron is saying that Sir Liddell Hart's criticisms were superficial but, in a deft Gallic thrust, excuses him because an Englishman is not expected to be profound.

It is too bad that Mr. Aron did not devote as much attention to the writings of Maj. Gen. J. F. C. Fuller as he did to those of Sir Liddell Hart. If so, he would have realized that an Englishman could be as analytical as a Frenchman and would have seen how thoughtful analysis converted Gen. Fuller from being a severe critic of Gen. von Clausewitz to becoming an admirer as ardent as Mr. Aron himself.

This, however, is a relatively minor criticism of Mr. Aron's magnificent book about Gen. von Clausewitz. Anyone who has read *On War* should read *Clausewitz: Philosopher of War*. In so doing, the reader can only gain greater understanding of, and respect for, Gen. von Clausewitz and his masterwork.

COL. T. N. DUPUY, U.S. Army, retired, is a writer on military subjects and the president of T. N. Dupuy Associates and executive director of its subsidiary, HERO (Historical Evaluation and Research Organization), located in Dunn Loring, Va.

Varied Fare

Atomic Diplomacy: Hiroshima and Potsdam. *Gar Alperovitz. Penguin Books, 40 West 23rd St., New York, N.Y. 10010. 430 pages; notes; bibliography; index; $7.95.*

This is the classic and highly controversial statement of the argument that President Harry S Truman dropped the atomic bomb on Japan to intimidate the Soviet Union rather than to end World War II. Republished on the anniversary of Hiroshima, with additional information to support the author's thesis, it is still fairly speculative and suffers from many of the faults and weaknesses of the original 1965 edition.

Definitions and Doctrine of the Military Art, Past and Present. *Lt. Col. John I. Alger. Avery Publishing Group, 350 Thorens Ave., Garden City Park, N.Y. 11040. 218 pages; illustrations; charts; maps; notes; index; $25 cloth, $18 paper.*

An encyclopedic handbook of military language, this unique reference work is the first commercially available volume of the "West Point Military History Series" directed by Brig. Gen. Thomas E. Griess (U.S. Army, retired), former department head at the U.S. Military Academy. It describes, defines and discusses the development of strategy, tactics, command, administration, logistics, technology, theory and doctrine. An initial explanation of fundamental principles introduces a detailed survey of the major periods of military history and a concluding examination of probable future trends. The volume was designed originally for West Point cadets but is a useful guide and lexicon for anyone interested in military history.

Requiem for Battleship Yamato. *Mitsuru Yoshida. Translated by Richard H. Minear. University of Washington Press, Seattle, Wash. 98105. 152 pages; illustrations; maps; notes; index; $16.95.*

When the great Japanese battleship *Yamato* set out on her desperate suicide mission against American forces invading Okinawa, Ensign Mitsuru Yoshida was on the bridge. This slim volume is his eloquent and moving account of that bold, fatal sortie which he somehow managed to survive. Ably translated and edited by Richard H. Minear, who also provided useful introductory material, Ensign Yoshida's narrative is sparse yet introspective and almost poetic. It offers remarkable insight into the thoughts and feelings of a young naval officer dedicated to a hopeless cause.

In the Hands of Fate: The Story of Patrol Wing Ten, 8 December 1941–11 May 1942. *Dwight R. Messimer. Naval Institute Press, Annapolis, Md. 21402. 350 pages; illustrations; notes; bibliography; index; $19.95.*

PatWing-10 was the only U.S. Navy aviation unit to see action against the Japanese in the early weeks of World War II. Flying lumbering, vulnerable PBYs without fighter protection, the pilots and crews undertook patrol, rescue and evacuation, and even futile bomb-

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Preventing Nuclear War: A Realistic Approach. *Barry M. Blechman, ed. Indiana University Press, Tenth & Morton Sts., Bloomington, Ind. 47405. 197 pages; notes; appendixes; $22.50 hardcover, $17.50 paper.*

This collection of papers was prepared by a working group of experts organized in 1982 by Senators Sam Nunn (D-Ga.) and John Warner (R-Va.) to develop and recommend practical means of reducing the risk of nuclear war. It proposes the establishment in Washington and Moscow of so-called Nuclear Risk Reduction Centers, linked by sophisticated communications systems, to monitor and ease crisis situations and prevent their escalation to major conflict. Additional recommendations include upgrading the "hot-line" system, joint planning for nuclear contingencies and better exchange of information on nuclear forces.

Ten Days to Destiny: The Battle for Crete, 1941. *G. C. Kiriakopoulos. Franklin Watts, 387 Park Ave. South, New York, N.Y. 10016. 408 pages; maps; chapter notes; bibliography; index; $18.95.*

Adolf Hitler invaded the island of Crete on 20 May, 1941, confident that victory would be immediately forthcoming. Instead, Australians, New Zealanders and British fought side by side with men and women of Crete to slaughter German soldiers by the thousands. Although the Germans eventually conquered and occupied Crete, the fierce resistance they encountered forced the postponement of their invasion of Russia. The author tells the dramatic story of this struggle against oppression by drawing on primary sources, reports, diaries and hundreds of interviews.

Hero or Coward: Pressures Facing the Soldier in Battle. *Elmar Dinter. Frank Cass & Co. Ltd., 81 Adams Drive, Totowa, N.J. 07512. 197 pages; bibliography; appendixes; $24.00 cloth, $12.50 paper.*

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